

THE EXCEPTIONAL CHILD

M.P.E. GROSZMANN



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BY

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"THE COMMON SCHOOL AND THE NEW EDUCATION"

"THE CAREER OF THE CHILD FROM THE KINDERGARTEN TO THE HIGH SCHOOL"

"SOME FUNDAMENTAL VERITIES IN EDUCATION"

"THE STUDY OF INDIVIDUAL CHILDREN," ETC., ETC.

CONTAINING A

MEDICAL SYMPOSIUM

WITH CONTRIBUTIONS FROM A NUMBER OF EMINENT SPECIALISTS

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THIS BOOK IS DEDICATED TO

MY WIFE

WHO HAS NOT ONLY INSPIRED ME WITH THE COURAGE

OF HER OWN CONVICTIONS

WITH THE UNSELFISH NOBILITY OF HER DEVOTED SOUL

BUT WHO HAS GIVEN HER LIFE AND HEALTH

TO THE WORK WHICH HAS MADE THE WRITING OF

THIS BOOK POSSIBLE

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FOREWORD

IN discussing the problem of the "exceptional" child, these pages employ the term in its broadest sense, as a general term in a scheme of classification such as I submitted to the educational and medical world a number of years ago. In their efforts to find smooth and in-offensive appellations for children of mentally defective development, some educators and school systems have loosely used this term (as they had used the term "atypical" previously suggested by me for a special group of exceptional children) as a euphonic designation of those children who are really abnormal. In this book, the term is used strictly in the sense of a general term for all types of deviation from the "average."

The schedule of classification underlying the discussion in this book is given on page 60.

The purpose of the book is to give a perspective of the entire situation, and to suggest ways and means of coping with the problem in its various aspects. It is plain that the problem is one which presents more than one feature. It is concerned with educational procedure, indeed. But the character of the human material which is to be educated plays a fundamental part. Thus, questions of heredity and family history; of environment and social-economic conditions; of child hygiene and public sanitation; of medical inspection and clinical work; of psychologic and psychopathic investigation, and other elements too numerous to state, enter into

the discussion. Our investigations will take us into juvenile courts and into the hovels of crime and prostitution; into the almshouses and charity bureaus, and wherever humanity's woes and shortcomings are studied and methods of relief are considered.

It has been my endeavor to write the book in simple language and in a style which will appeal even to readers who have but a modicum of scientific training and vocabulary. The average teacher and parent cannot be expected to be an expert along the various lines of research which are followed in this book. Yet, I hope that this book will be helpful to them in opening up the problem to their consciousness, and in stimulating them to do their share in bringing about possibilities for its solution. On the other hand, the material is so presented that it gives the reader who is anxious and capable to make professional use of it the opportunity to do so. An effort has been made to avoid mere assertions, and to refer in every case to sources and expert counsel. The classified bibliography presented at the close of the book will facilitate these references.

I wish to thank those who have assisted me in the preparation of the manuscript, by advice and co-operation, by encouragement and actual help; who have placed their own material at my disposal, and helped me with the permission to use their illustrations and cuts; also those publishers who have provided large collections of their books for my study and information. I am particularly grateful to those eminent specialists who have given their valuable co-operation in the compilation of the Medical Symposium. I desire to acknowledge the services of my son, Waldemar Heinrich Groszmann, who has not only helped in the preparation of parts of

this manuscript, but has for years devotedly assisted me in my practical work with atypical children.

May the book find a modest place in present-day educational literature, so that it can help where such help is needed.

MAXIMILIAN P. E. GROSZMANN.

PLAINFIELD, NEW JERSEY,
September 1st, 1917.

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PART I

THE PROBLEM OF THE INDIVIDUAL CHILD

CHAPTER I

THE EDUCATIONAL PROBLEM IN GENERAL

The Public School and Its Critics.—America's greatest pride has always been its public school system. The American public school is the expression of *democracy in education*. It differs in its democratic organization from the school systems of other countries, pedagogic Germany included, where the public elementary school is only for the "masses," and where other kinds of schools exist for the "classes."

However, for the last few decades the public school, even in this country, has in many instances been deserted by the children of the "classes." For them a number of private and "finishing" schools have sprung up. This development has one cause in the change of social conditions and standards in the commonwealth. Another cause is an increasing distrust in the efficiency of public education.

Of late years a great outcry has been raised against the public schools. The question is asked in many quarters: "What is the final value of our school system?" Criticism is voiced against conditions of immediate con-

cern, such as efficiency in administration, efficiency in the methods of teaching, efficiency in giving the individual child a "square deal." But far broader and more serious considerations are causing an ever-louder voice of protest.

Generation after generation of native-born citizens have been laying the foundation for an American people as a distinctive national unit. This new people, however, lacks racial uniformity. In creating a new nation out of the mixed blood from the Old World, America has a gigantic task before it. Race characters of divers kinds must be blended into a new national type which is really international in essence. In this process the main problem consists in preserving and conserving the progressive and constructive elements of each racial and national constituent, and in eliminating the backward and antisocial elements as far as possible. These include physical characteristics, weaknesses and advantages, as carried and developed through the centuries; and mental, emotional, and ethical factors and differences as well.

With the development of industries and commerce, broader national interests and aspirations are being recognized by the individual citizens. Questions of national policy within and without the country, the relations of groups of citizens to one another, and of the nation to other nations, are occupying the minds of thinking men and women.

A national consciousness is awakening.

Thus the question arises: "What are the public schools doing, not only to conserve the nation's young, but to prepare them for efficient citizenship under a democratic government which will permit progressive solidarity of

individual interests and a clear-cut national policy toward the world?" Many, and oftentimes appalling, are the failures in life, despite public school training. Many and undeniable are the evils of our national life. Both the individual and the national failures are being laid at the doors of the schools which are accused of wrong ideals and practices.

Much of this denunciation is exaggerated and unfair. We are apt to overstate our grievances. But we must not blind ourselves to the fact that there is a great need of new educational standards, aims, and ideals. Let us look into the situation more closely.

In considering the efficiency of our whole public educational system it may be well to pause a moment and to think of its fundamental objects. For what is education expected to prepare the nation? What should education do for the welfare and progress of the community? What is it to do for the child as an individual?

Education and National Ideals.—It is not the purpose of this book to dwell more than in passing upon the relation of public school education to national aims. It is well, however, to call attention to the fact that one of the primary functions of education is to supply the moral force of progress.

When we stop to consider that our schools to-day teach even their own country's history so superficially that the pupils scarcely know, much less understand, the beginnings and motives of American political, ethical, and spiritual evolution and their relation to present-day conditions at home, what can we expect of the citizen of the future when he is called upon to deal with world problems? Of what value to him is the costly experience of

his forebears? How can his moral judgment afford to ignore this intellectual background? How many of the pupils of to-day are taught definite ideals for the nation, definite in the sense that each voter will help mould a national policy which shall be the outgrowth of an improved democratic form of government based on historical influences? Without this knowledge of historical forces at home and abroad, past and present, is not the voter of to-day incapable of intelligent decisions, and is not the nation's policy largely the result of experiment, and determined by the genius of a few leading minds?

This is a day of commercial and industrial supremacy, and such an era brings with it tremendous national problems. How does the school help the individual consciousness to understand the mighty tendencies of to-day: the concentration of wealth, the organization of labor, etc.? How does it prepare the future citizen to deal with the perplexing difficulties of correction and relief among the unfortunate; and with that host of political and social issues, such as prohibition, taxation, direct voting, etc.? Every one of these problems is the result of a growth the germ of which dates back to the very foundation of our republic.

The demand that public school education must in the future take the large national issues under consideration, and shape its instruction accordingly, may seem startling, but it is a problem which the older countries have long since tried to solve, each in its own way. From a conglomerate mass of races and peoples which have settled in this continent, there must arise a real nation, not necessarily homogeneous in stock, but harmonious in aim and spirit. National consciousness, national ideals

must arise, and these must be awakened in the future citizen while he is at school.¹

Public School Education and Community Problems.

—The industrial world has long since learned that in the process of converting raw material into a finished product, waste must be reduced to a minimum. The older extensive methods of production are giving way to highly scientific, intensive forms. Instead of fashioning but one kind of finished product, many kinds are now developed from the same raw material.

We are beginning to discover that one of the most important raw materials, namely, the *human* material, is being most wastefully treated. For the sake of obtaining a single article, complacently called the "average" man or woman, we are throwing immense quantities of unexploited material on the human scrap-heap. The business of life is *not* primarily the attainment of commercial, industrial, or scholastic success. *It represents fundamentally the age-long effort to develop the race, that is to say, the men and women of the community, to a higher level of human intercourse and moral relation.* As a matter of fact, commerce, industry, and all other outward forms of progress, while spelling the tangible elements of success, are not in themselves the goal. They are the handmaids of community development

¹ "Great, progressive races are mixed races. Consider the ancient Romans and the early English! The original Celts of the British Isles were driven back before the Romans and the barbarian tribes, but the later fusion of Celtic, Norse, Anglo-Saxon, Jute, and Norman elements has swept the seas with its mighty fleets and has conquered large spaces of the earth with its sturdy armies. . . . And within our domain progress and growth have followed the route of the pioneer and the immigrant. Progress has been slowest to develop in those sections where the blood of the people has remained least mixed."—Armour Caldwell in *The American Leader*, May 27, 1915.

along the lines of higher civilization and culture. From this it follows that education must never lose sight of those fundamental purposes of national growth. *To prepare children on the principle of narrow utilitarianism for personal success within selfish limits defeats the very objects of education as community-serving, and from the point of view of national and world progress.*

As in the conversion of crude oil into petroleum it was found that the by-products (naphtha, aniline dyes, mineral oils, medicines, etc.) outvalue the first product, so by an analogous process we are beginning to find that the by-products of the raw human material, represented by the many individual variations, are far more valuable than the "average" person.

It costs the citizens of the United States \$1,100,000,000 each year for police, courts of justice, prisons, charities and correction, and similar forms of self-protection against the festering human refuse-heap. A continued or even increasing annual outlay of such an amount under the heading of "losses" on the debit side of the ledger spells ruin for the nation. It indicates the presence of a highly dangerous social cancer, one of a most malignant and progressive nature, one whose treatment is most costly in cold terms of money.

The *Business of Life* needs to be placed on the basis of *efficiency*. The saving is not merely one of money but, what is vastly more important, one of *human souls*. Life's enterprise must be conducted like any other business. New methods to avoid, to reduce, and to convert waste must be found. Capital must be invested in *human assets*.

It is a curious fact that the nation is spending only \$600,000,000 annually for schools, churches, and other

constructive agencies; in other words, \$500,000,000 *less* is spent to develop human assets than is spent to keep up the human failures!¹ It would seem reasonable to expect the American people to apply their recognized business perspicuity to invert these figures, investing more for *constructive conversion* and *conservation*. Such investment in proper methods of conversion of waste would reduce the enormous refuse-heap now accumulating in the form of human derelicts, causing it automatically to shrink to reasonable bounds.

All the failures in the Business of Life, among them the 500,000 or so of criminals "doing time" in the prisons of this land, were once pupils in our schools, or playfellows in our city streets, in the villages, and the rural districts.

The salvation of these human derelicts is a social problem. Better methods of conversion must still be studied and applied. The problems of the future can be solved only when, first, we *recognize* existing conditions, and, second, apply the remedy intelligently. Here is an educational problem in the widest sense of this term.

The productive power created by right education releases social and economic values many times in excess of the capital invested. The aggregate of human failures which have to be kept under control by the expenditure of enormous sums, represents a dynamic force of stupendous magnitude. It can and must be converted

¹ Mr. Edward Morrell, the San Quentin convict, who has been helping Warden Thomas Mott Osborn to put Sing Sing under the honor system of self-government, gave, in an interview in the *Evening Mail* (New York) of May 19, 1915, much higher figures. He says: "This country is spending annually \$3,500,000,000 to support its criminal institutions. This is half again as much as goes for training in schools and colleges."

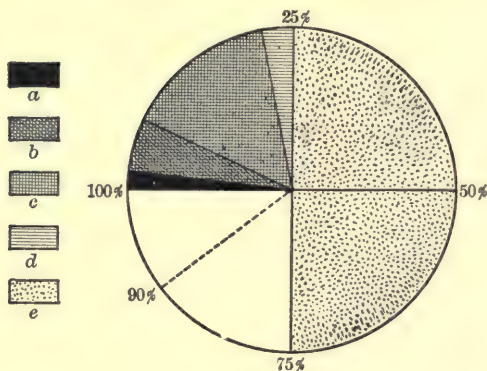


FIG. 1.

Percentage diagram of exceptional children.

The circle represents the entire number of children of school age in the United States.

The *white* quadrant indicates the estimated proportion of *perfectly healthy, normal children*. All the others are more or less handicapped and in danger.

The *dotted* semicircle (e) indicates the *pseudoatypical children* who are laboring under some removable disadvantage—scholastic, physical, and otherwise.

The shaded quadrant includes various groups of truly *exceptional children*.

- (a) Abnormal children (2 per cent);
- (b) Subnormal children (5 per cent);
- (c) and (d) Atypical children (18 per cent);
- (d) Exceptionally bright children (3 per cent).

Presented in figures, the problem would appear as follows:

Number of children of school age.....	24,000,000
Some investigators claim that 90 per cent have some defect or ailment	21,600,000
More conservative estimates restrict this to only 75 per cent.....	18,000,000
This would leave only 25 per cent (6,000,000) healthy, normal children. Among the 75 per cent of handicapped children are the following:	
<i>Pseudoatypical children</i> —about 50 per cent.....	12,000,000
Those who suffer from easily removable difficulties, including physical ailments.	
<i>Atypical children</i> —about 18 per cent.....	4,320,000
Including the exceptionally bright, the nervous, the difficult, the retarded child.	
<i>Subnormal children</i> —about 5 per cent.....	1,200,000
Including the blind, deaf, crippled, arrested, economically submerged, and primitive groups.	
<i>Abnormal children</i> —about 2 per cent.....	480,000
Including the moral perverts and imbeciles, the feeble-minded, insane, etc. ¹	

¹ The figures presented in this chapter have been compiled from a large number of sources, medical reports, special investigations, etc., and are conservative.

into a helpful, constructive force instead of being a menace to society.

The Human Raw Material.—The *human raw material* is to-day in the form of 24,000,000 children of school age (5 to 18 years). Just as a chemist analyzes rock or ore, so this material can be divided into its component parts. The diagram on page 8 represents graphically the problem of the child as outlined in the classification and terminology employed in this book. (Cf. Chapter IV.)

Any one of these truly *exceptional children*, including the exceptionally bright, the "different," the neurotic, the retarded, the subnormal, and the abnormal children, is a *potential* derelict, failure, crank, or criminal. Saving him depends upon timely care and training.

Even the pseudoatypical child will go wrong through neglect.

Of the *physical ailments* alluded to, these figures will show their appalling extent:

50 to 75 per cent of all children suffer from defective teeth (with all the consequences resulting therefrom)	12,000,000 to 18,000,000
30 per cent suffer from nasal obstructions.....	7,200,000
26 per cent suffer from eye-strain ¹	6,240,000
20 to 25 per cent suffer from nervous disorders.....	4,800,000 to 6,000,000
12 per cent suffer from some deformity	2,880,000
4 per cent suffer from defective hearing.....	960,000
2½ per cent suffer from tuberculosis..	600,000

¹ Doctor Lewis C. Wessels, ophthalmologist of the Bureau of Health, Philadelphia, published an investigation of visual defects in school children of his city in *School Progress* of May, 1915. He writes: "As a rule, the position in class was in direct ratio to the visual defect, the worse

It will be readily noted that we have in this raw material the makings of all the cankers and sores of our body social, and that it is the problem of education to convert the human failures into human assets, reducing the final waste to an irreducible minimum.

The Public School and the Child.—In the preceding sections we have discussed education as a national and community policy. When we deal with education in its relation to the individual child we come to a more direct problem. *What shall education mean to the child as an individual?* This is a question which can be variously answered, and its answer is the real object of this book. That it cannot be dismissed with a simple definition covering *all* children equally, the author hopes to make apparent as he proceeds. Before entering upon a more detailed discussion of the various phases of the problem the author will briefly consider a few of the criticisms directed against the present form of public school education.

These criticisms usually fall under two heads: those dealing with administrative problems and those dealing with education as such.

Administrative Problems.—The American public school has of late years become a huge and unwieldy piece of machinery. The diffused population of former years has been drifting more and more to limited areas. Our cities have grown by leaps and bounds, and we have before us the problems of urban congestion. Great waves of migration would roll along the nation's high-

the defect the more backward the pupil. The worst cases were naturally sent to the dispensary first in 1908. Seventy-six per cent of those pupils were backward. In 1914 the serious defects were not so numerous, yet 62 per cent were backward. The average for seven years was 67 per cent retarded children, principally on account of defective vision."

ways in unexpected directions and would create new centres of density and accumulation. Even in the rural districts, the tendency of school administration has been to combine the scattered small schools into fewer, but larger, more centralized buildings. Added to this internal *shifting of the population* there has been a tremendous influx of great masses through foreign *immigration*. Before the plans to build and equip schoolhouses, to provide teachers, administrative officers, and the manifold material needs for the millions at a given time have been put well under way, and long before completion of these plans, still greater demands are thrust upon the authorities. As a result, the educational machinery has in most cases been inadequate for current demands.

Superintendents of schools and boards of education have been so absorbed in these administrative problems, building and equipping schoolhouses, training teachers, selecting and providing school and other material, etc., that these demands have deprived them of time for concentrated thought upon educational problems as such.

As a matter of administrative expediency the pupils have been placed in large groups in palatial school-buildings, often housing one thousand or more; these groups being subdivided into classes varying in attendance anywhere from thirty to sixty pupils. It has become a question not of training each pupil to his highest efficiency,¹ but of pushing the greatest number ahead with a minimum of progress compatible with a grade. Efficiency is being measured by classes, not by pupil units. Individual differences, aptitudes, and difficulties are perforce lost to sight. Extensive rather than intensive

¹ See Chapter II.

administrative methods have become the vogue. This naturally means wasteful production, the very opposite of all modern tendencies.

About 20 per cent of all pupils in our schools are "repeaters." That is, they repeat one or more grades during their school career, failing of promotion. This illustrates, among other things, the costliness of our present methods, as the following table will show:

The average cost for each pupil per annum is about	\$40
In a city with a school population of 100,000 the taxpayers must annually provide approximately...	4,000,000
20 per cent repeaters (20,000) cost for one year....	800,000
At least one-half of this number could have been saved from repeating by adequate medical relief, differentiated instructional provisions, and better teaching; therefore <i>wasted expense</i>	400,000

We may find that *most* of the repeaters might have been saved the loss of time and expense; thus the waste is still more appalling.

It can be shown in other ways that the administrative problems are still far from being solved. These difficulties are reflected in the education as such and give rise to the multitude of individual problems which agitate the home and, in their aggregate, the nation.

Education and the Individual Pupil.—Education, pure and simple, is never a problem of masses; it is forever that of the *individual child*. In the family, in the small school of bygone times, even in the ungraded rural schools—whatever imperfections these educational institutions may have had—the individual child has had a greater chance for recognition and special treatment than he has in the school palaces of our great cities.

The present school system is built largely upon a fal-

lacious application of the declaration of *political* independence in which all men are declared equal. Socially this should mean that all men must be given an *equal opportunity*. But in the matter of *endowments*, of aptitudes, of fitness for life's work, *all of us are very unequal*, representing *different types* varying widely in character and intensity. Even with equal or similar endowments, there is a *difference of individual rhythm*. The rate of physical growth and of functional development, including the mental, differs greatly in different individuals, so that it appears unfair to expect the slow to run a race with the quick.

Individual differences have, of course, been recognized in a vague way at all times. Striking differences naturally attracted attention and received first consideration when it came to making provisions for differentiation in teaching. During the early and prescientific observation of school children, one of the first groups to emerge for special care, as being an exception to the rule, was that of meagre endowments. But this differentiation even to-day remains quite crude. Many a child who is simply tardy in his mental and physical growth is thought dull or mentally defective, although in reality oftentimes possessed of unusual mental vigor; and the child of circumscribed ability is confused with the child of feeble and abnormal mind. Of late years scientific methods of research are penetrating more deeply into the child problems and permit clearer distinctions.

It is perfectly true that there is a larger number of truly mentally defective persons than has been suspected (*cf.* figures given before), and that they represent a distinct burden on society. It is imperative that the

problem of the *really abnormal* be faced and be handled intelligently. Among our criminals, our paupers, our prostitutes, and all those who are generally ineffective and unable to become socialized, there is a *small percentage of mentally abnormal types*—types that are, as far as we know, unredeemable.

This group, representing *irreducible waste*, does not, however, constitute primarily a *school problem*. It constitutes an *economic* problem, a *social* problem, a *psychopathic* problem, a *medical* problem. The group includes two distinct types: the *feeble-minded* and the *insane*. It postulates opportunities for *custodial care*.

But the burden of criminality, ineffectiveness, and failure in life cannot be laid upon mental defect in the majority of cases. Many a well-endowed person has failed in life because he did not have the training which would have fitted him to do his best; or because adverse social and economic conditions in an unfavorable environment prevented him from living the life for which Providence had endowed him; or because in some other way he had missed his true vocation. Economic pressure has increased among the pariahs of society; and the most common disease of our captains of industry is neurasthenia, not to say psychasthenia. In a measure, we are dealing with misdirected potentials of leadership in the ranks of capital as well as of labor.

Many a criminal of the type which is reached by law is mentally brilliant. We must not underestimate the moral qualities even of the "underworld." There is a spirit of "gang-fairness," a singular sense of responsibility for one another. There are even sentiments and circumscribed virtues to be found among the unfortunates who live in the seething caldron of crime and

immorality beneath our very feet. Here again we are dealing with misdirected potentials. What have become destructive tendencies might have been led into constructive channels if the individual possibilities and needs of these outcasts had been understood *when they were children*.

It is an interesting but not generally known fact that against the estimated 2 per cent of mentally *abnormal* children, those at the *lower* end of the line, we have at least equally as many at the *upper* end! These are the unusually bright and promising—those who are destined to become leaders of thought and action. *The exceptionally fit have so far received less attention than the exceptionally unfit.* Yet, oftentimes one who might have been trained to become a leader for good, for progress, and for the highest ideals of the nation and of humanity, is so warped by neglect and lack of constructive opportunity that he becomes the misleader, the demagogue, the oppressor, the shark, the destroyer, the crank.

Between these two ends there are hundreds of varieties of attitude, of aptitude, of physical and mental endowment, or of moral and emotional quality. There are so *many different types of mind*, all approaching their own life problems from a different angle, be it that of the artist and dreamer, that of the constructive genius, or that of the commercial organizer, of the master of the word and of abstract thought: that it is appalling to think that we have attempted to cast them all into the same mill of school education, expecting to see each type emerge from the spout at the other end unmixed and unpolluted, perfect and well-ground in its own right.

So wasteful has the extensive method of education become in the effects produced on the community that the

public is seriously alarmed by what seems a new problem—the exceptional child. Criticisms of existing methods are rampant among educators and thinking men and women; alarm is being expressed by the laity over the increase of ineffectiveness and of variants from the “average.” The thinkers are seeking to find definite causes and to remedy conditions; the laity are allowing themselves to be aroused and misled by startling statements and quack remedies.

The Problem of the Exceptional Child.—Thus, the *problem of the exceptional child* constitutes a vital issue in modern education. It means, first of all, changing from our extensive methods to those which are intensive. A real solution must go to the very roots of educational principles and practices. (In a narrower sense, the exceptional child is the moving power of our civilization.) “Average” man—the man of mediocrity—represents a stable, stale, stagnant element—the “mass.” But the exceptionally bright child, the child of so individual a mind that he defies average standards, one who wants to go his own way self-directed; yes, even the slow child who gathers his characteristic strength little by little, like a slow-growing oak which outlives centuries, he is the one who moulds the destiny of our race, and his powers may be turned into evil as well as into good, in proportion to the stimulus toward right motives he receives at the turning-points of his life. Truly, the “variation from type” is a factor in the development of the race.

Even the really backward child is more needy of attention than the “average” child. The latter will usually find his way in this humdrum Philistine world of ours, and will represent “average” virtue and “aver-

age" standards without much effort or danger. But the child whose powers, while normal, are weak, needs much help to find his place and to do his work in life.

In considering the various forms of child life, it will become evident that *education must mean something different to each one* if it is to speak a known language to him. The special purpose of this book is to lay stress upon the right differentiation of children as to type and condition, and to concentrate attention more particularly upon the needs of those who require individual recognition and training. It suggests methods by which the problem can be studied and by which much of the human waste can be reclaimed. Modern methods of conservation and improvement of the race are needed to reclaim the handicapped normal child. (A scientific analysis must naturally precede the process of reclamation. Then it will be possible to reduce the present waste to the irreducible residue, and to convert what can be reclaimed into valuable assets for our civilization. This analysis is here attempted.

CHAPTER II

THE PROBLEM OF EFFICIENCY

Standards of Efficiency.—In a discussion of educational methods and of problems of individual adaptation, so that each child may grow up to do his social service in his own best way, the problem of efficiency demands serious consideration.

In the valuation of this problem we must, however, come to a clear understanding as to the meaning of the term "efficiency." Much attention has recently been given to "standards of efficiency" in business, in teaching, in government, and what not. We have "efficiency experts," "efficiency tests," and a host of suggestions as to how to attain "efficiency." Each author has an interpretation of the term "efficiency" peculiarly his own, often entirely at variance with the previously formed conceptions of the reader.

This book is not intended to offer a treatise on the psychology of the subject. The author will attempt, for practical purposes, in a common-sense sort of way, to distinguish between *efficiency*, as he understands the term, and *skill*, so as to show the significance of differentiating between the two when dealing with educational problems.

Efficiency vs. Skill.—Efficiency is the ability of the individual to appreciate his environment in its various phases, to recognize the material and spiritual opportunities for social betterment which it contains, and to project upon it his own best self for the progress of the

commonwealth. Efficiency finds its highest expression when it produces a reciprocal relation between the best in the individual and the best that is to be found in the outside world—a relationship of mutual uplift. Therefore, it has essentially intellectual, moral, and spiritual qualities. It enables the individual not only to *comprehend*, in the broadest sense of this term, but to *construct*, to *create*, as well. It implies potential ability along many different lines of activity.

Efficiency is the quality of the leader. It does not confine itself to opportunities for doing big things, nor does leadership restrict itself to exalted places. It really manifests itself in the faculty of doing all things well—the small as well as the big; and in the power of adjusting oneself quickly and intelligently to changing conditions and new problems. To be efficient has always been the distinction of the complete normal man.

Individual Competency.—Each individual possesses a distinct combination of physical, mental, emotional, spiritual, and other endowments. These particular endowments, latent and unrecognized as they may be, represent his *potential competency*. There is seldom an individual so poor in endowments of some kind that he could not develop *actual competency* of considerable strength if he had a suitable field for their conservation, cultivation, and exercise. These endowments are influenced in a great measure by hereditary factors and by the type of community in which the individual grows up. They are affected by the standards of material progress, of public spirit, of morality, etc., which pervade his social environment.

Individual Increment.—In a progressive community the life of each individual should represent some form of

increment to that progress. But the full competency latent within each one is aroused, developed, and directed to a high state of action only in a relatively small number of instances.¹ Only a few citizens succeed in producing large individual increments. In the majority of cases, competency is only partially or slightly cultivated; the resulting individual increments are small—even negative, in some instances.

Types of Men and Mind.—The distinct combination of endowments of an individual will tend to direct his competency into some particular path. Thus we commonly speak of “types” of men and of mind, meaning thereby different physical and mental combinations. The competency of the individual will determine the “type” of his community increment. The butcher and the surgeon, the apothecary and the chemical research professor, the soldier and his general, the clerk and his employer—each one will add his increment to the progress of the community in terms of his own competency.

But there is a great difference in the *performance level* of each. The butcher *may* develop into a splendid surgeon, the apothecary into a successful research chemist, etc., by improving his performance level. Such a higher level can be reached mainly through a more intensive intellectual training. Intellectual *quality* cannot be altered in any single generation; training will not increase the ultimate limits of individual mental endowments. But *training can co-ordinate, educate, and elevate the latent abilities to their highest performance level.* It is this de-

¹ That there are in every man vast numbers of unused potentials is illustrated by the fact that only a fraction of the actual number of brain cells is really functioning. “The wisest person that ever lived probably had several million brain cells that were more or less idle.”—Halleck.

velopment of the intellectual quality in quantitative measure which generates, as it were, the dynamic value of the individual's endowments and increases his increment to community progress.

Complexity of Modern Life Conditions.—Under present life conditions it is far more difficult to leave our individual imprint, in terms of efficiency, upon the community than at any previous time. To appreciate fully the various phases of even the simplest present-day environment is an infinitely more complex matter than it was a hundred years ago, especially in cities and in the more thickly populated sections of the country. In the past, most people found the groove along which they could work efficiently with relative ease. Changes came slowly, so that there was time for readjustment. Social strata, classes, and castes existed for centuries, distinct and limited in their ambitions and activities. Within the limits of their life conditions there was much opportunity for the individual to do whole-hearted work, and there was less of division of labor. The working man was an artisan who had the opportunity, and often the desire, to become an artist in his particular trade, and the agricultural portion of the population had similarly unrestricted occupations and opportunities.

We are now living in a period of stupendously rapid changes. The human mind has become so extraordinarily complex and inventive that it tackles problem after problem, allowing nothing to be called impossible. Specialization of labor has so divided the tasks that an individual only performs a part of the whole which is assembled by others. Machinery replaces the handwork of millions and has revolutionized industry and agriculture. The amazing progress of the means of

communication and transportation, over land and sea, under the ocean and through the air, has brought the life and productions of distant countries together. Classes and castes along old-country lines have become obliterated, and are slowly being replaced by divisions along other lines.

Traditional American life is undergoing vast changes. Ever new aspirations welled up with each new generation, driving its members to new sections of the country or to new spheres of labor. Besides, our country is annually absorbing great numbers of *immigrants* from all parts of the globe. The sturdy Norwegian yeoman, the stolid, thrifty German peasant, the mobile Russian Jew, the nomadic herdsman from the Hungarian puszta, the indolent and primitive Neapolitan lazzaroni, and many another representative of classes and races that have to this day preserved almost mediæval conditions and habits, have been cast upon these shores to come into competition with the restless American freeman. Distinctions of race and nation, of instincts and ambitions, of ideals and aspirations, of education and refinement, of century-old culture and leadership, give way before this crushing flood of the new migration of peoples.

The social and moral props—family, position, tradition, institution, education, etc.—which sustained the parents and the grandparents of the present generation, are being torn away, and all of us, especially the immigrant, must face new conditions upon our own initiative. The individual has an increasingly difficult task to adjust himself to the rapidly changing situations, and to find his place in life. What would otherwise seem to be a most auspicious epoch for the development of a new brotherhood of men resolves itself into another form of

the primal struggle for existence—a struggle in which unscrupulous, merciless cunning and brute force only too often secure the mastership.

Skill vs. Efficiency.—Under these conditions innate competency is overshadowed among the masses of the people by *skill*. The broader aims and ideals of the individual, of the community, and of the nation are left unexplored while the masses live through their daily grind.

Skill is the *ability to perform a given task well*. After the *modus operandi* of a task is once grasped, success in attaining skill depends upon perfecting the separate operations essential to execution, eliminating all extraneous acts or thoughts not immediately concerned in the operation; through repetition the sequence of operations in each performance is fixed until conscious effort is fully eliminated and the nearest approach to machine-like perfection is reached. Thus, skill tends to reduce a task to a definite succession of physical and mental reactions, limited in number and kind, making them resemble simple automatic reflexes. Skill is intimately related to *habit*. Conscious adaptation and intelligence are reduced to a degree sufficient only for the immediate situation. Any change in the order or type of reaction immediately jeopardizes the perfection of the skill in that operation. Besides, the final success of skill as such consists in its *immediate result*—the thing completed.

The merely skilful maid may be taught to sweep the floor without much idea why the broom should be applied in one way rather than in another; in contrast to the efficient housewife who may not possess skill in sweeping, but appreciates what this task implies, and

who can therefore direct, in an organizing manner, not only this but many other household tasks. The skilful accountant, computing figures at his desk, need not raise the level of his conscious adaptation and intelligence above his task. His employer, a captain of industry with a wide perspective of organization and power, deals not simply with figures as such, but brings his executive leadership to bear on operations which affect much vaster interests than merely his counting-house and the accuracy of his accounts—he is a factor in the commerce of the world.

By far the greater part of the ordinary tasks in life are based upon skill. These tasks merely represent different grades of skill on varying physical and intellectual performance levels. Naturally, the skill required by a surgeon to perform an intricate resection is infinitely more complex than that of a butcher severing the bone of a carcass. The actual skill required in any specific instance may be measured quantitatively. The mere fact that a task is skilfully performed does not endow that skill with any moral quality. The burglar who opens a complicated lock may show no less skill than the locksmith who made it.

Skill Quantitative, Efficiency Qualitative.—Efficiency needs skill as one form of its expression, but skill is only an applied mechanical evidence of previous ideation. As such it deserves careful training. Skill is appraised quantitatively and is confined to a limited number and type of acts. Efficiency is elastic in the manner of its application; it applies potential skill along many different lines of activity; it is qualitative. Skill is the result of special training; efficiency is a directing force from which skill emanates. Skill has no moral quality; effi-

ciency is measured by moral standards. Skill is dependent upon immediate results such as can be measured in terms of money value or of some other form of practical advantage. Efficiency may not redound in the form of worldly success to the benefit of the individual possessing it—for what he has builded may be of a nature which cannot bear direct fruit, or may not ripen until a remote future date. Men of recognized efficiency, like Pèstalozzi (**Case 1**) and Kepler (**Case 2**), powerful forces of progress that they were, were failures from the standpoint of immediate personal or worldly success.

The efficient man comprehends the situation, selects the particular suggestion it contains for the purpose in view, and decides upon, or invents, the process assuring the result. The skilful man accepts the creative contribution of the efficient man, and through practice reduces the operation to machine-like perfection.

Community Efficiency.—The opportunities offered to the aborigines and to the early pioneers in the untrammelled resources of a new continent under pristine living conditions allowed types of men to succeed whose competency sufficed for the attainment of those forms of efficiency which were needed in that period of history. The individual performance level was low.

With the mastery of these resources and the development of more complex life conditions, including "law and order," and advancement in civilization and culture, as described before, new types of competency came into demand. Instead of the hunter who bartered the fruit of the chase—his venison and pelts—we now have the sheep farmer, the stock breeder, the clothing manufacturer, etc., with the host of those whose occupations mediate between these producers and the consumers.

Instead of the trader who collected the products of the woods, the fields, and the streams, we now have the commercial centres, the brokers, the middle-men, the exchanges. The cruder forms of efficiency have receded to remoter regions, where they still exist in primeval simplicity.

Now, communities tend to crystallize into definite types—types representing different combinations in competency, just as is the case in individuals. These community types are founded on some phase of industrial, commercial, agricultural, or purely intellectual life. Examples of such community types are well known: we have the *shoe factory* or *foundry centre*; the *export* or *stock exchange centre*; the *cotton*, *wheat*, or *cattle-producing centre*; the *university centre* or *scientific laboratory*, etc., *ad lib.* Even in our most cosmopolitan cities the population splits itself into groups about definite life occupations and neighborhood activities.

Localization of Industries.—The tendency in a given locality is to confine variation to definite lines. The general opportunities, such as existed but a few generations or even decades ago, are dwindling away, and communities are drifting more and more into specialized activities. This narrows down the opportunities of the citizens so that in the main only those will develop efficiency increments whose combination of endowments fits into the specialized aims of the community. Furthermore, such a high performance level will be demanded that only those of rarer quality will survive as independent factors.

Those whose combinations of endowments are out of harmony with the types in demand will have greater difficulty to develop and utilize their competency, or to

raise their performance level above a circumscribed level of skill. Thus, every community loses potential increments of efficiency in great numbers—of the rich supply of potential competency only a small portion is intensively developed to an efficiency level. The rest remains dormant, or flickers out of existence from disuse. The individuals are reduced to a mass of “wage-earners.”

Skill in the special activities of the community is the general substitute for dwarfed competence—skill which scarcely touches the mainsprings of the true self in numberless instances. Occasionally we speak of “inefficient” individuals in another sense, meaning thereby not those who could be truly efficient if they had the opportunity, but those whose competence is so different from community demands that the individual cannot even attain skill in the specialized activities there existing. This is not a new thing. Even in the villages of old, the “ne’er-do-well” was merely a misplaced individual. Poets, painters, musicians, philosophers, even inventors and builders may be very useless and inefficient beings in communities requiring different types of competency.

Factory Methods.—In former times the shoemaker made the entire shoe. His standing in his trade was measured not merely in terms of skill, but in terms of efficiency, by the extent of his intelligence and of other qualities which he showed to improve the process of manufacture and to produce a better article with each new effort. His knowledge of shoes and their manufacture was comprehensive and progressive.

To-day it is not the efficient artisan who produces our shoes; it is the factory. Shoemaking has become a science and has been mastered in its entirety by a relatively small number of men whose efficiency lay in

that field on a high performance level. The process of production is carried out by machines and by hundreds of feeders of machines, each skilled in *one* operation, complete in itself, but only a part of the whole process.

This tendency to reduce the occupation of the individual to a most definite and eventually simple and automatic form may be observed in most of our industrial and commercial pursuits. The "efficiency standards" of our "efficiency experts" are really concerned in the reduction of the tasks of efficiency to tasks of skill. At one time the author watched a number of youths of both sexes arranged along a long, broad table in a certain part of a large soap factory. Machinery shoved an endless procession of cakes of soap before them, which they had to pick up and pack by dozens into pasteboard boxes which lay in stacks by each worker's side. Their task was to dispose of the cakes of soap as fast as they came along. The workers' worth to the factory owner was judged by their skill in doing this one thing. In another place were pairs of girls occupied in filling small bottles with perfume, which spouted forth at regular intervals in mechanically measured quantity from a machine. One girl filled the bottles and corked them; the other shoved the bottles toward her with one and the same monotonous jerk of her right arm and hand. Again the workers' value to the employer consisted in their skill to do this work, machine-like and at a required speed. Throughout the factory each worker did some one limited act for eight or ten hours a day—day in, day out, for weeks, perhaps years. This is a typical example of the entire method. Of course there are many varieties of occupations, and many differences in the degree of intelligence required to maintain a given performance level of skill.

This is a matter not of giving individuals the opportunity to express themselves in terms of their own best and efficient selves, but of forcing them to adjust themselves to community demands which may afford them a "living."

Efficiency and National Ideals.—Just as the community represents the various available increments of its individual citizens, so does the nation depend upon the efficiency and skill increments of its entire population. As a nation America possesses a wonderful combination of endowments in its natural resources, in its government and history, in its geographical advantages, in its human stock; a combination of physical, intellectual, emotional, and spiritual endowments in which rare natural gifts of earth, water, and climate offer unlimited possibilities to a heterogeneous and virile people.

This combination tends to give the nation as a whole a distinct competency, and gives to all its activities a certain trend. This trend has many phases and is observable in the country's industrial and commercial development, in the form of its government, its social life, in the physical and mental health of its peoples, in its intellectual progress, in its position among the nations.

Our country is based upon the conception of democratic government. But the idea of a truly democratic efficiency of the whole people is yet in its infancy. Certain forms of individual and community efficiency have been highly developed, but they lack relation to a national plan—they have in many cases not only been wasteful of national resources and assets, but have been detrimental to all other types of latent, undeveloped forms of true national efficiency.

In order to develop this national efficiency, we must first take stock of the nation's truly characteristic en-

dowments. There are its physical and geographical possibilities in resources and trades. Then we have the far more important factors of the character and types of our composite people. We are moulding all races of the world into a new unity. This means a tremendous force of unique possibilities. Community development in America has taken an interesting trend which has a distinct national bearing. Specialization in efficiency for industrial pursuits has produced a new kind of "community," which goes beyond local interests and geographical contiguity and is national in scope. The binding force of some special interest has welded distant parts of the country together. We have but to think of our huge iron and steel interests; our oil, coal, tobacco, cotton interests—each organized under efficient leadership so as to embrace the entire production of the commodity; we may think of our labor-unions, our national societies, political parties, etc. Much of this wonderful development is desirable and the result of a marvellous display of efficiency; much, also, is undesirable, because anticivic, and must give way before a higher national idealism.

The nation must define its aims and recognize its ideals. Are its aims in industrial and commercial life to organize national community methods such as its "captains of industry" are practising? To foster factory methods such as above described? If so, the nation must take its course with a clear knowledge not only of the facts, but of what its course means as a national policy.

If a majority of the increments making up the progress of this nation must forever be based on skill only, while the tasks—for the execution of which this skill is

required—are planned out by a few efficient leaders, let us recognize this as a situation to be faced. But it would mean a sorry shipwreck of democratic ideals.

Democracy and Efficiency.—The plan of democratic government rests upon the tenet that there must be opportunity for all of us to appreciate the various phases of the country's problems, to recognize the material and spiritual opportunities for social betterment, and to give of our own best selves, by ballot or in actual service, for the good of our fellow citizens. If we wish to remain true to the democratic ideal, how shall we reconcile this with the actual tendency to give opportunity for efficiency only to the few, and to restrict the many to circumscribed skilled occupations?

To harmonize the democratic ideal with actual conditions, we must make a careful survey of our population, *differentiating our citizens into broad groups representing types*. We must preserve and cultivate the combinations of endowments such groups represent, so that efficiency increments on a national basis may be obtained from large numbers of individual members of each group. Further, if it is discovered that efficiency increments cannot be secured or even expected of every individual citizen; that there exists a percentage of individuals who have no efficiency stamina, or whose stamina it is not practical to develop; we must at least provide opportunities to raise their performance level in skill of constructive kind to a higher plane. Thus, the process of conserving the competency of the individual will reflect itself in the conservation and evolution of the national competency.

National Tendencies and the Public School.—"Vocational training and guidance" has become a popular

phrase, a sort of slogan. Such training and guidance is ostensibly to be a means of producing greater individual efficiency in various occupations, by selective training in harmony with individual competency. It has been suggested that by scientific study the individual competency can be discovered, conserved, and developed for the good of the student and of the community. School authorities have realized the importance of this demand. But from lack of a clear-cut conception of the larger aims and of the individual potentials they have been unable to arrive at a satisfactory solution of the many problems involved. Failing to discriminate between the community and national issues entering into this problem, failing to realize the need of individual differentiation, they are cramming their pupils with a mass of unnecessary and indigestible material.

Or, heeding the extreme claims of the advocates of specialized rather than common education, some school systems have patterned their organization upon the general outlines of industrial organizations, developing many branches or departments of special instruction, so that the pupil be enabled to focus his entire attention upon some definitely circumscribed training. These systems endanger the true purpose of the schools—the education of *efficient* boys and girls. Of course it is important to increase skill; or, rather, to raise the performance level from a simple to a more complex skill. But is *skill* of any degree or type the sole object of our schools? Is it their purpose to feed factories with girls who can attain a higher speed in packing soap or filling perfume bottles? Is it our aim to concentrate the education of boys upon greater skill in fastening so many dozens of heels a day to ready-made shoes, or to start

levers which in turn will set in motion thousands of spindles, or to handle a typewriter, or to count up figures? Would not the object of such an educational factory be nothing higher than to produce human machines for the regular industrial factory, the office, the store?

The examples cited represent low performance levels of skill. But is there any essential difference in educational *aim* if we give the pupils a "practical" preparation for the skill demanded in the banking-house, the railroad, etc., which varies from the lower forms, if they be lower, only in type or degree, but not in essence? Will education so circumscribed in scope conserve and convert competency into dynamic forces of efficiency?

School men must clear up their conceptions of community aims and national ideals. They must meet the demands of the more powerful tendencies more adequately. We must bear in mind that the *best individual increment is the efficiency increment*. This is based upon special competency which needs to be developed to its highest perfection. It is the educator's problem to harmonize individual efficiency with community needs and national aspirations.

The Public School and Individual Efficiency.—Our schools must take it into account that individual endowments differ, and that these different endowments predispose to differentiated work. The whole field of possibilities which the true ideal of efficiency presents must be explored.

Perhaps there will always be a residue of persons who can do no more than start levers of machines, or be hewers of wood and drawers of water. For such, skill and efficiency are so nearly identical that they mean lit-

tle to the progress of the nation. But aside from this almost negligible residue we have the millions of children who represent human raw material of immense possibilities. To condemn them to life-long slavery in machine-like occupations *which will be more and more assumed by real machines* is a great wrong to them and to the nation. They contain potential competency of every variety which is lying fallow until worked to a high state of efficiency through the aid of education. Many of them may become inventors of devices and machines which will replace human slave-labor. Each individual is capable of being matured in his own right only; he must have the chance of expressing his own life attitude in his active pursuits.

It is efficiency which creates, promotes, and increases material and spiritual progress. Efficiency, in the last analysis, is the result of a man being fully himself. It implies the development of the individual as an individual to his full possibilities. It presupposes that the individual is conscious of his powers and knows how to project them upon his environment. It implies the power of self-management and self-direction—the vision of human development and cultural growth—the enjoyment of cultural existence. It is the expression of sterling character, honest work, of motives that go beyond individual narrowness, and which serve the ideals of national betterment and the progress of civilization. Efficiency points high; it points to perfection; it points to godliness.

CHAPTER III

DIFFERENT CIVILIZATION LEVELS IN MODERN SOCIETY

Many Different Types of Men.—There are all kinds and manners of people. This is an old truism. There are the bold and the meek, the noble and the vicious, the successful and the failures, the leaders and the led. We meet with surprising specimens of humanity every day. All these different kinds and types of people are *foreshadowed in the children of the nation*. They will grow up to be the boors, the gentlemen, the workers, the philosophers, the dreamers, the libertines, the cowards, the bravadoes, the saviors, and the criminals of the rising generation.

In the previous chapter we have discussed the problems of efficiency and skill in their relation to individual and community problems and to national progress. We found that there are different levels of intelligence, of performance, of endowments—physical, mental, moral. We might be tempted to dismiss the problem of difference among people without further discussion, merely mentioning in addition the different opportunities of education and environment; effects of disease and of neuropathic conditions, and a host of other causes which are generally cited in discussions of this kind.

But there are deeper causes, and this chapter is devoted to a study of certain evolutionary factors which will explain to us the biological facts which have led to a differentiation of types.

The theory here advanced is that we are dealing with

different civilization levels, and that each individual represents mental and moral attitudes characteristic of one or several of these levels. Many, or most, in fact, are mixed types.

Primitive Man.—Early man, like the animal, acted largely upon impulse, without considering consciously the effect of his acts. His actions were in the nature of slowly developed but deeply ingrained instincts and reflexes. Life conditions being simple, the thought-process required for individual adjustment was minimal as compared with modern requirements. The ability to inhibit immediate reaction to impulse is characteristic of higher mental life, of the development of higher brain centres with their associations of ideas: of civilized man as we understand him to-day.

It is true enough that the primitive conquest of fire and of the wild animals, the solution of the problems of shelter, of the manufacture of implements and of weapons, of pottery and of clothing, and other fundamental human achievements were of tremendous moment. But the individual increment to the progress of civilization was very small. Where we now reckon with decades, primitive advance reckoned with hundreds and thousands of years. The process of civilization has indeed been long, and its primordial beginnings demanded centuries of adjustment to fix each slight gain.

Among savage peoples there were seldom any defectives, "degenerates," or feeble-minded. It is claimed that as civilization progresses the number and variety of low types increases. This claim, although apparently well substantiated, is to be accepted with caution and reservation. We must study the composition of modern society from many view-points, so that we may really

know the laws governing it in order to avoid errors in analysis and deduction.

Primitiveness vs. Deterioration.—Many have become accustomed to ascribe all cases of low mentality and morality to deterioration, a dropping down from a higher state of civilization to a lower form. Such degeneration and deterioration is undoubtedly observable in certain individuals in whom physical disease and psychopathic condition produce a dissolution of the higher functions. This dissolution brings the lower centres into uncontrolled activity and causes a reversion to primitive forms of mentality. To a lesser extent the charge of deterioration is also true when successive generations continue to decline in physical well-being and mental health, showing a disintegration of family traits, of tribal and racial elements; in short, of stock. Again, we have had psychic epidemics sweep over entire countries and continents, like the hysterical frenzy of the flagellants in the thirteenth century, and other outbreaks of morbid fanaticism, religious, political, or otherwise, at all times. There are various popular crazes even at this period (like the tango craze, the war craze, etc.), which cause a temporary dissolution of the elements of contemporary civilization and often assume the form of distinct popular manias.

But we are apt to overlook the fact that every large community of the present time contains many elements of *primitive constitution*, of a retarded mental development which has been behind contemporary progress ever since time began. Here we have a problem entirely different from that of deterioration. Instead of degeneration—which is a condition of falling from a high to a low state—a condition of *low development* con-

fronts us, *a development which has never reverted, but has ever risen*—very, very slowly, it is true, but nevertheless representing an upward, even though greatly retarded movement. A closer study of individual evolution convinces us with increasing force that primitive or retarded development, in the sense here described, is far oftener the cause of failure in life under present-day conditions than has been suspected. And this retardation must not be confused with pathological retardation, or with feeble-mindedness.

Much has been said by some pessimistic philosophers about the sad future of the race if deterioration be allowed to go on unchecked, and “eugenics,” often of a spurious kind, has become a scientific slogan. Little, however, has been done to diagnose even approximately the extent and varieties of primitive elements mixed with every community of the civilized area of the world. We must revise our methods of approach in sizing up the social misfit, the disturber, the dead-weight. Instead of branding an individual, with a shrug of the shoulders, as a “misfit,” we should try to discover how far he *may* fit, judging his position in the scale of social usefulness by the measure of his competency. This will show how much he is lacking, surely—but not through being “defective,” but through being a representative of earlier forms of civilization. Thus we may rank him properly and discover methods of “fitting” him and raising him in the scale.

Simpler Mental Constitutions.—With the increasing complexity of modern life demands, as has been shown in the previous chapter, an infinite variety of situations is created which handicap the simpler mental constitutions. What had been a normal standard during the

childhood of the race, or under generally more primitive conditions (even those of our period of pioneer settlements), naturally lies far below the level of modern demands. In many cases the strain produced by these demands upon the simpler mental constitutions may reach the breaking-point, then causing true reversion.

The conduct of an individual of this type will be normal under the stimulus of earlier instincts, and of primitive methods of thought and reaction, under conditions commensurate to his constitution. These conditions are, however, opposed to modern social conduct. To him, modern social organization offers many restrictions—on the other hand, offering many opportunities for temptation. Through these temptations which give an outlet to his most primitive instincts, he may be led into mental disintegration, which predisposes him to complete failure. But if the true status of such an individual is rightly understood in childhood, he may be helped to fill his place in life. His competency must be conserved and the performance level of his skill and efficiency must be developed rationally, not brushed aside and ignored, or underestimated in value through the force of overspecialized community demands. He must be given an outlet to make his endowments a constructive force. It may mean a proper distribution of individuals in places where they best fit. The peasant boy who is quite efficient in his home environment is apt to fall by the wayside when reduced to a factory hand under the congested conditions of urban life and competition. Such a life is too remote from his natural method of thinking and living. Not infrequently he will seek forgetfulness, or the illusion of strength and self-satisfaction, in dissipation and drink, and thus lower

his chances of success still further. His children, growing up in an atmosphere of strain, of the unequal struggle of a primitive equipment pitted against modern life standards, will lack vitality, and may become mental defectives, as they are physical defectives, the victims of malnutrition, poor housing, lack of air-space and of joyful exercise. Factory girls, immigrants from foreign lands, have been shown to develop various kinds of psychoses, through the effect of economic pressure. Certain primitive races, like the North American Indian, have been practically wiped out for the same reason by the advance of civilization.

Individual Evolution.—It has been experimentally shown that the so-called "culture epoch" theory, first crudely formulated by the German philosopher Johann Friedrich Herbart (1804), and later by his disciple, Ziller, is essentially true. The author's own investigations, coupled with the work of other research students, have permitted a modern formulation of this theory.¹

This theory implies that each individual born into this world passes from infancy to childhood and maturity through a series of developmental stages which broadly represent the consecutive stages of civilization through which the human race has passed. The parallelism between the conduct and work of children and that of savages and ancients is truly striking. It can be observed that the same biological laws which have determined the growth of the human mind in the race are still at work in the evolution of the child soul from infancy to adult age, and shape the child's conduct at different stages. Of course an American child is at no

¹ Cf. "The Career of the Child," pp. 90 ff., and "Some Fundamental Verities in Education," pp. 94 ff.

time an Indian, or an Assyrian, or an Egyptian. But his methods of thinking, feeling, and symbolizing, his instinctive activity, the sequence of his modes of conduct, will reincarnate the development of the race. All children pass through a sequence of epochs, although not every one passes through all the details of epochal characteristics; nor do all pass through the different periods in exactly the same way or at the same rate. Variation is caused by different sets of hereditary and environmental influences. An adult will, therefore, show a mixture of modern and primitive traits, tendencies, attitudes, and instincts.¹

The author has roughly divided the life of a child from babyhood to maturity into five divisions: the period of infancy, the primary or childhood period, the elementary or boyhood period, the intermediate or pubescent period, and the advanced or adolescent period.

The *Infancy Period* (from birth to 2 or 3 years) may be described in the words of Professor James as the one in which a living thing is thrust upon "a big, blooming

¹ "Other voices screamed through my voice, the voices of men and women aforetime, of all shadowy hosts of progenitors. And the snarl of my anger was blended with the snarls of beasts more ancient than the mountains, and the vocal madness of my child hysteria, with all the red of its wrath, was chorded with the insensate, stupid cries of beasts pre-Adamitic and pregeologic in time. . . . The red wrath is my disastrous catastrophic heritage from the time of the slimy things ere the world was prime. . . . Just as the human embryo, in its brief ten/lunar months, with bewildering swiftness, in myriad forms and semblances a myriad times multiplied, rehearses the entire history of organic life from vegetable to man; just as the human boy, in his brief years of boyhood, rehearses the history of primitive man in acts of cruelty and savagery, from wantonness of inflicting pain on lesser creatures to tribal consciousness expressed by the desire to run in gangs. . . ."—Jack London in his book, "The Star Rover," which is at the same time a frightful impeachment of modern prison methods in all their cruelty, and a fascinating romance of the human race.

confusion," having to make the discovery that it is an entity distinct from this confusing environment.

During this first period and the second, the *Primary Period*, the human species differentiates itself from the lower creation. Animal traits merge into human characteristics, and the beginnings of human thought and conduct are achieved.

The *Elementary Period* (from about 6 to 11 years) is the "race period." These years represent the stage in which race characteristics are evolved from the general human potentials.

The *Intermediate Period* (12 to 15) is the nation-forming, the pubescent period.

The *Advanced Period* (16 to 21) is the time when family and individual traits will manifest themselves more strongly. This is a period in which maturity finally shapes itself into a definite life trend for the individual.

In considering *individual evolution* several factors must be taken into account. The periods mentioned cannot be definitely circumscribed, neither in their length nor in the exact order or type of their manifestations. Each individual is by heredity a distinct *combination of endowments*, which will determine in a measure the entire individual evolution. Upon this evolution will finally depend the *potential competency* of the individual. Mental and physical growth may be normal and healthy, or weak and abortive. Each individual will pass through the successive stages at a different rate of speed and completeness. We are all more or less advanced in certain directions, as determined by our own peculiar combination and by opportunities of development. We are also distinctly primitive along other lines. Some of us

will reach maturity, that is to say, the level of modern civilization, rapidly; others will lag behind; still others will never reach it. Their "maturity" will remain below the modern level. In the same way, we have entire races which are backward if measured by the standard of our American civilization—either altogether, or in certain particular lines of development.

Competencies will differ in different individuals and determine individual careers. Talents and genius will rise up at the expense of other, weaker potentials. The artist often lacks business sense; the merchant may be without a true valuation of poetic beauty, or be anti-social in his aspirations. Some of us may enjoy reading Browning, or combine commercial success with the ability to compose music; yet, when asked to draw a figure or a landscape, we may employ a primitive method which has not advanced beyond the clumsy symbolism of the ancient Egyptian or the North American Indian. The author knows a lady of culture and refinement who by preference uses her fingers for counting, like the savage, in order to facilitate some problem of household accounts.

Inasmuch as individual evolution depends upon the development of higher performance levels of skill and efficiency in terms of competency, it is essential to understand the innate *individual combination of aboriginal, dormant, and submerged traits with those virile, plastic, expansive, modern potentials* upon whose development we usually concentrate our efforts. The aboriginal traits are really the stronger, for they are the oldest ones, established at the beginnings of history, and every one of us has them deeply ingrained in the fabric of his soul. The modern traits, being younger and less strongly in-

trenched in our system, are like delicate plants, needing much care, so that the weeds of uncultivation may not overrun them. Neglect or disease disarranges this top layer of culture first, so that the older strata erupt.

Influence of the Environment.—It is therefore of the utmost importance to estimate rightly the influence of the environment. Upon it depends an individual's chance for developing his particular ability, just as a seed will thrive on good land, but die on sterile soil. Where educational facilities are inadequate, where social demands are restrictive, where economic pressure excludes forms of skill and efficiency unessential to immediate community needs, individual progress may be warped, unless there is an element of volitional power which sets the individual strongly against the local current, or which enables him to free himself from local bondage, through emigration or otherwise.

Repression, perversion, or lack of exercise of the budding possibilities cause irregularities in the progression through the developmental periods. Normal maturity is retarded or futilized, and the individual cannot cope with the demands of his place and time. In effect, mainly the lower, primitive, normally submerged potentials remain active while competency in the higher functions disintegrates. Many individuals, for this reason alone, remain practically stationary in their development and come to represent either an obsolete type or a reversion to earlier periods of civilization.

Cultural development of the individual is, then, not concentric, or vertically striving upward in parallel branches which issue from the primitive trunk with equal speed. *A man does not reach the modern level, if he reaches it at all, evenly and simultaneously with all his*

faculties. He may "get stuck" in earlier stages in some, or even many, of his mental faculties. It is for this reason that the struggle for existence is still so primordially crude and brutal, in spite of our modern "culture"—not only among individuals, but among nations. How far this goes, how much of the savage is still alive in modern man, has been terribly and discouragingly demonstrated by the awful world-wide war which is raging at the time of this writing.¹

Civilization Levels.—The crimes of the "Black Hand," the "Camorra," the "Mafia," etc., as they occur in this country as reverberations of Old World conditions, illustrate the eruption of primitive impulses in racial groups which are not far removed from earlier forms of civilization. In semicivilized nations, revolutions, political and social disturbances, and similar elemental events, sometimes lead to a true reversion to the savage type of their ancestors, as has recently been observed in Mexico and in some districts of China. Richard Barry gave an interesting story of a wealthy American who succeeded in saving his life while a captive in the hands of the cruel Mexican bandit leader, *Zapata* (Case 3). This is part of the story:

That night the American slept in the bandit camp, a dozen miles away in the hills. In the middle of the night he overheard two of the bandits whispering. "What will you do with him after you kill him?" asked one. "Cut out his heart and take it to my old woman." "What for?" "She'll cook it." "Wretch,"

¹ Doctor George W. Crile, in his book "A Mechanistic View of Peace and War," describes the effect war has upon man. He strips, with no gentle hand, the coat of convention with which civilization clothes the primeval man. War, with all its horrors, according to Doctor Crile, reveals man as he really is. He quickly reverts to a fighting demon, whose only purpose is to kill.

replied the second bandit. "You are too much like a soft Gringo. *Eat it raw!*"

The mine-owner knew that this was a commonplace and serious conversation among primitive men whose ancestors had been savages, and who now in anarchical upheaval were reverting to type. Fortunately, however, he also knew that they were children as well as savages, and could be diverted if he could but properly appeal to their irresponsible instincts. In the early dawn he called for Zapata, and told him he possessed two marvellous fighting-cocks which he had long been preparing for combat on the coming Sunday. Zapata instantly was eager to get the cocks, and the immediate followers who overheard the conversation quickly forgot, apparently, their intention of murder, or at least postponed it. Zapata offered to have some of his men go back with the American and get the cocks.

They were about to start when, as an afterthought, the American turned back to the leader and said he would not reveal the whereabouts of his cocks unless the bandit chief agreed to let him off with his life; and he thereupon revealed that he had overheard the conversation of the night before. The Mexicans who overheard this laughed immoderately, rather pleased with the American's shrewdness. Zapata put the question to a vote among his men, and they unanimously agreed to let the Gringo live if he produced two good game-birds. That he had given up his money had not mollified them, but that he was willing to give up his fighting-cocks, and at the same time was clever enough to demand his life in exchange for them, they were more than pleased.

In fact, he returned under escort with the cocks, stayed and watched the ensuing fight, in which one was killed, and then before he departed on his way for the city of Mexico, Zapata opened a bottle of champagne and drank his health.

Modern Reverberations.—In all these cases we are confronted with a more or less primitive mental and emotional condition, an undeveloped conception of right and wrong. If we study the development of the idea of *property*, for example, and of *respect* for other people's

property, or of the *sanctity of human life*, we shall be surprised to find conceptions and customs of only a few centuries ago (and even now in some places on the globe) to be greatly at variance with our own, or what we think are present-day conceptions. Sometimes the seemingly primitive instincts, or modes and manners of living, of thinking, feeling, and acting; or the crude and coarse tendencies of children who are branded as being sub-normal, or even abnormal, do not really point back to very ancient levels of civilization and culture. The refinement of instincts of which we boast, the appreciation and practice of habits and manners which are not only more polished but based on purer thought and kindlier consideration for others, are relatively recent things. Our own great-grandfathers differed very much indeed from modern conceptions of refined mental and moral habits. Table manners, matters of cleanliness and privacy, the relation of man to woman, the conception of private rights and personal liberty (think only of the New England Blue Laws), the relation of master and serf, and a thousand other things illustrate this. Superstitions of all kinds are not very long extinct—if we feel justified to assume that they are now; and yet they reveal an unreasoning mind, unconscious of modern knowledge. Public education, with reading and writing for the masses, marks a very recent stage of civilization. The Dame schools of the New England of a century ago were of the most rudimentary character. All this indicates not only, as it might first appear, differences in opportunity and provisions, but deeper differences in aptitude and attitude. The peasant populations of some European countries have preserved to this day many of those mental and moral conceptions and customs which

to the modern American mind seem shocking. As immigrants they bring them among us, and thus there will occur clashes of moral and mental attitudes which sometimes land them in the clutches of the law.

It may be difficult to study, to discover, and to locate different culture levels and to determine their exact place among us, or their origin, and the conditions which have caused cultural backwardness in each case. But there are examples of cases all around us, and some will be characterized in later chapters, notably those on delinquency and prostitution. Bygone notions are reflected or reverberated in the minds of those atavistic individuals whom we call criminals. The impartial alienist and the open-minded psychologist can judge the causes and conditions of these better than the jurist. As in the instance of the sensational trial of the McNamara brothers in Los Angeles a few years ago, and of similar revelations in the bitter struggle for a readjustment of social and economic relations, we are confronted with a condition which is not always clearly understood. We are here dealing with primitive practices in modern garb. Individuals of this type are, in a sense, representatives of primordial instincts which come to the surface in this economic strife: in the fierce and elemental struggle for existence, for the preservation of life—that first and most powerful racial instinct which releases primitive promptings of savage power.

The selfishness of many of the wealthy employers, the unscrupulous greed of many a captain of industry, belong in the same category. The gambling spirit which has made itself so conspicuous in our amusement-craving, neuropathic age—in card-games as well as at the Exchange, in book-making and in many other ways—

reminds one forcefully of the barbaric epoch in human civilization when man lived from hand to mouth and depended upon chance rather than purposeful planning: the chance of the hunt and the weather. The devil of gambling is truly a fetich of savage man—an idol to whom sacrifices of human lives and happiness are made even to-day by those whose intellectual level represents an undulating plane, with higher peaks of culture and depressions of barbarism.

Strata vs. Individuals.—The more closely we analyze the human stock of any nation the more apparent it becomes that there are not merely individuals but whole groups, or strata, representing either survivals of obsolete types, or typical reversions to earlier periods of civilization. In radical upheavals such as are caused by attempts to reorganize the social fabric, these deeper levels of culture are oftentimes brought to the surface, just as in the formation of the earth's crust earlier strata have been forced to the top by volcanic action. Where the national unit is weak because of lack of broad ideals and aims, where the consciousness of culture is but poorly developed, where the different elements composing the nation are but recently assembled and imperfectly assimilated, there is the constant problem of police control, relief from poverty, public and private charity, reconstructive agencies of all kinds, to keep up the equilibrium of modern conditions. The strata here referred to are characterized by a certain helplessness and recklessness; there is lack of practical ability to size up situations and strenuous life conditions—they live care-free from day to day, not thinking of the morrow.¹

¹ The primitive recklessness of his buccaneers is well described by Robert Louis Stevenson in "Treasure Island." In one place he says:

These various deeper levels of civilization are not to be diagnosed as potentially or actually feeble-minded or "low grade," or as progenitors of a degenerate race. Unrecognized and unprovided for, educationally speaking, they doubtless supply their quota of paupers, of ineffectives, of the jobless. They cannot plan, or concentrate, or endure. "They sow not, neither do they reap, nor gather into barns"—yet our charity feedeth them. Many of them are the tramps, the vagrants, the despair of all those who endeavor to organize their life in an "orderly" manner. Their sense of honor is primitive—they are just a mass, a clumsy mass. The proper distribution and disposition of these strata is a grave problem. It is a matter of redemption through generations, for the children of this type possess the rudimentary potentials of cultural progress.

Composite American Stock.—Lower, or deeper, civilization strata exist in every nation. There are sometimes racial differences, such as are represented by the remnants of the conquered tribes within the conquering race. Again, we have the condition of geographical isolation within a nation which may cause an entire group to develop independently and more slowly than the other national groups. Such is the case of our "contemporary ancestors" in the mountainous back yards of Virginia, Tennessee, Kentucky, and the Carolinas. To this con-

"They had lit a fire fit to roast an ox. . . . In the same wasteful spirit they had cooked . . . three times more than we could eat; and one of them, with an empty laugh, threw what was left into the fire, which blazed and roared again over this unusual fuel. I never in my life saw men so careless of the morrow; hand to mouth is the only word that can describe their way of doing; and what with wasted food and sleeping sentries, though they were bold enough for a brush and be done with it, I could see their entire unfitness for anything like a prolonged campaign."

dition we must add political and social factors which have caused the repression of entire layers within peoples, checking their mental uplift. Here we have the typical peasant, the prototype of the proverbial "boor," whose mental horizon is extremely narrow, owing to the isolation and oppression which have been his lot for centuries. These fragments and relics of bygone times had been left untouched by the progress of civilization above and about them. They embody to this day mediæval and even primitive life conditions and instincts.

The mixing of these elements with more progressive ones, as brought about by modern modes of travel and industry, does not immediately or intrinsically change them into modern cultural material. It must be again emphasized, however, that *backward development of this kind must not be classed with arrest of development*. Most of these elements have latent powers of cultural advance. They will constitute valuable increments for future epochs.

In our own country, where all these different old-world types are assembled, we have a particularly complex mixture of progressive and primitive elements. The different nations represented here, even as national units, present not only different types of civilization, but they also have reached different degrees of advance. It is unnecessary here to analyze fully the citizenry of our country. An illustration or two will indicate the general argument:

How racial differences affect the success of school training is evidenced by the studies on *colored children*. The report of Miss Blascoer on the colored school children in New York, which endeavors to be very fair and

charitable to this class of pupils, shows that of 441 colored children individually studied, 104, or nearly one-fourth, were "exceptional," that is to say, according to her use of the term, specially reported by principals or teachers; or they were truants, or ungraded class pupils; 147 were in the so-called retarded group—of these, 89, or over 60 per cent (20 per cent, or one-fifth of the entire number studied), were truly backward, according to the tests used. Similar percentages have been found in other studies of the colored race, notably that of Howard W. Odum in the public schools of Philadelphia. These findings do not preclude high scholastic attainments by individual members of the race. But as a race the American negro, mixed type as he is, is not book-minded, but industrial, and has a genius of his own which has yet to receive proper recognition in our educational system.

To throw further light on this interesting problem the author will quote a few selected passages from Marion J. Mayo's investigation on the "Mental Capacity of the American Negro." Mayo says: "The contributions which the races have made to human progress and culture have differed greatly. . . . The history of civilization is the history of relatively few peoples. . . . Certainly a sufficient reason for differences in the degree of progress made by different human groups may often be found in geographic conditions, even were the capacity for inward response supposed to be the same. . . . To determine whether the races of men actually differ . . . amounts to determining whether or not they have arrived at the same level, not on the scale of culture, but on the scale of organic and mental evolution. . . . The fact that the attention of a people is directed and

engaged along certain lines, while in a way due to accident, is not unrelated to its inward capacity for response. . . ." Statements of this kind, based as they are upon careful scientific research, are significant also when we judge the mooted question of "normality." This point will be discussed in a later chapter.

Speaking of his results in studying the scholastic attainments of colored children in comparison with those of white children, he admits the same facts which Miss Blascoer has shown. He comes to the conclusion that the superiority of the white children "is due to a *real difference in the general mental equipment of the two races*—a difference that has been brought about through physiological and mental evolution, and which never can be equalized by processes of education and training." This difference is, however, much smaller than many have supposed. "But another factor which may be of greater significance for the social progress and intellectual capabilities of a race is its *intellectual variability*. The capacity of a race for independent progress depends in a very large measure upon its capacity to produce in considerable numbers men of very high ability. It is the man of genius upon whom social progress has ever depended. . . . Now, the greater the inherent variability of a race in mental qualities, the greater will be its chances of producing men of that order of ability ranked as genius. Hence it follows that the capabilities of a race are to be judged less by the average ability of its members than by the limits of its hereditary variation from this average, and the consequent number of its men of high ability." Professor Mayo then shows that "as regards mental variability, the white race is more variable, but not a great deal more variable, than

is the negro race. But the importance of small differences in hereditary traits is not to be overlooked. In the struggle for supremacy or survival, these small differences may be, and no doubt often are, the determining factor." These conclusions, while opening up to the colored race welcome opportunities for future advance, nevertheless show the distinct difference of type.

The American negro is no longer a separate people. But there are entire peoples and races which are backward as compared with modern civilization, and which, either in our possessions, or as immigrants, form part of our educational problem. They constitute the "white man's burden." There are not only those who have never created a special civilization of their own before the white race took them in tow, like the Filipinos, the South Sea Islanders, etc. But even nations which in ancient times were banner-bearers of civilization have stood still and become stagnant. The Persians plough their land to this day as they did in the time of Abraham, and the great masses of the Chinese live their life in modern times as primitively as did their ancestors in antiquity. The trend of history has often thrown peoples into cultural eddies, so to speak, after they had played their part at certain periods. Thus the Balkan states, the bone of contention between various great powers, have been left in a state of mediæval semicivilization the crudity of which has become sadly apparent in the wars of late years.

Primitive Conduct.—As has been indicated before, the development of culture and civilization is brought about by the process of mental and social maturing. At the lower stage impulses release actions by direct reflex; with the development of the higher brain centres thought

intervenes between impulse and reaction. The more completely reaction is controlled, and eventually inhibited, by thought, the higher is the stage of mental and social development. Thought has been fitly called "suppressed" or "suspended" action. Physio-psychologically expressed, the difference between modern civilized man and the man of primitive or atavistic type is this: that with the latter the lower brain centres predominate, producing reflex activity, while civilized man interposes thought and inhibition. So-called "panics" or mob-rule would indicate that either this mob is composed of men of primitive culture levels, or that through some strong and contagious affect, like fear, fright, passion, the higher brain centres of the mass have become paralyzed for the time. Wars produce a similar effect upon the fighting multitudes and their contemporaries, lowering the civilization levels of the warring nations by centuries, whatever the sobering and stimulating influence of war may otherwise be thought to be.

Sometimes we observe, even in quite intelligent people, a certain adventuresomeness, a desire to live different lives, to tear themselves away from their accustomed surroundings, which have become irksome to them. Children show a similar desire to change their character; girls want to be boys, boys want to be girls; or they run away from home and school to live a less restricted or less tedious life. In some of these personalities we may be confronted with a permanent, latent psychic weakness which becomes acute under the stress of certain harassing emotions. The soul of man, after all, is not a perfect unit, but is composed of a great number of smaller psychic units which do not always harmonize.

There are also temporary disorders of a psychopathic

character which may affect individuals as well as masses. Relapses into primitive promptings and modes of action may be observed in civilized man under the effect of fatigue, or disease, or emotion, such as will temporarily weaken or paralyze the higher brain centres. Specific causes are drugs, digestive disturbances, irritations of various kinds, and intoxication. Most of us may, under such circumstances, have felt promptings to act irrationally; and if we are honest with ourselves we shall remember many a moment in our lives when we have come dangerously near to committing an evil act, even a "crime." The passionate desire to escape the confines of our present every-day life and environment, of our customary self, by running away, or even by suicide, may have been present in our soul often enough.

Civilization Levels and Democracy.—As has been shown before in these pages, we are now witnessing an enormously rapid advance in life demands as characteristic of modern civilization; a world-wide competition of peoples who, though far distant, have been brought near to each other by present-day means of travel and communication; a condition of acute mental stimulation and unrest caused by these stirring changes—coupled with the development of democratic forms of government which have increased the social responsibility of the individual. This advance has made it particularly difficult for the backward types and culture levels to become assimilated, and to maintain their existence and integrity in the fierce struggle of the millions for life and the pursuit of happiness. Occasionally they remain unassimilated, like foreign bodies in the national organism, and become inimical to its life and health.

This is true even for the backward types of our "na-

tive Americans." It is doubly true for the backward types of our immigrants. Vast numbers of these millions of foreign birth are to be quickly "Americanized," as it is styled. Closer analysis will reveal the fact that this process is largely superficial, confined to a modicum of language attainment, and that it will require the life of generations and a new articulation of ideas and ideals before these masses will fully enter into the inheritance of culture and liberal institutions of which the true American type is the expression; or before they will be able to give their own best racial contribution to the building up of progressive Americanism. *The American type, at its best, represents a conservation and blending of all positive culture elements which the highest types of modern nations have developed.*

This, again, is a process of maturing, not merely of external coalescence. But America has certainly the peculiar advantage to secure a world-culture the like of which has never existed before, not even at the time of the Roman Empire. With it goes the high duty of steering free of race-prejudice and narrow-minded provincialism, of the dominating influence of ephemeral fads and a mere mechanical majority-rule. True American democracy must not produce and strive for averages on a level of mediocrity. It must recognize and encourage variations. It must be built upon absolute respect for individual rights, as well as upon the principle of strict individual accountability.

This true Americanism is a matter of healthy growth. The conditions of this growth are determined in the schools, the family life, the spirit of the body social. To secure it we must begin with the *child*. In the child all the difficulties alluded to in these opening chapters pre-

sent themselves in their simplest terms and under conditions which may enable us to forestall antisocial derailments.

Individual Adjustment.—Efficient civic service through individual adjustment is determined by several important factors which will be understood in the light of this argument.

The first factor is the *position of the individual in the cultural scale*. To what culture or civilization level does he belong? Is he one of a group, or stratum, or race, exhibiting primitive or backward elements? What is the cause of this group backwardness? Is it due to historical, or political, or social influences and conditions? Is it of recent origin and localized, or is it dating back to ancient periods, a survival of savage instincts and bygone modes of life? Or is he a single individual, "born short," that is to say: Is he an atavistic type from causes which affected him alone? What, then, in his hereditary endowment and his congenital affections must be held responsible for his condition, and to what extent can it be relieved? Or is he the victim of social oppression, of economic pressure? Does he belong to the submerged?

Again, if he is not altogether "born short" but has really all normal potentials, showing, however, at a given time tendencies of a primordial character: What is it that causes these phenomena of retroversion and reversion? Is there a psychopathic condition which needs diagnosis? Can it be relieved? Is he a "psychopathic personality," or merely the victim of temporary neurotic disturbance? Or may he be acting under some great emotional stress? Is he one of a group, or social layer, collectively affected by some temporary emotional

state—depression, despair, fear, fright, furor, panic, etc.?

It is evident that individual adjustment will depend very largely upon the proper recognition and regulated training which each individual receives *during the period of his childhood*.

We are now prepared to discuss the tentative classification of children presented by the author some years ago—a classification which is in reality a recognition of social strata such as has been suggested in this chapter.

CHAPTER IV

CLASSIFICATION AND TERMINOLOGY

Traditional Confusion in Terminology.—Owing to the indefinite and arbitrary use of terms applied to the different kinds and classes of children, and to lack of scientific perspective in determining the relation of deviations from normal standards, no full recognition of the real problem of the exceptional child has been possible. From this haziness and vagueness of terminology and classification much confusion has resulted even in appreciating the position and problems of normal and typical children. To obviate this the author has submitted a tentative classification as a working basis. It was first elaborated in cruder form in 1902, and has since been enlarged and developed. The form here presented is a modification of the one which was submitted to the American Academy of Medicine, at its Atlantic City meeting in May, 1909. While it was first intended to give merely a clearer perspective of the problem of exceptional development, it is really a review of the child problem in general, and presents in tabular form social strata, culture levels, efficiency types, etc., such as result from human endowments and opportunities.

CLASSIFICATION

- A. **NORMAL CHILDREN.**¹ (Those who are in accord with the norm, or standard, of human nature, possessing all human potentials.)

¹ Standard Dictionary: *Norm*: A rule or authoritative standard. *Normal*: According to an established law or principle; conformed to a type or standard; regular or natural.

1. **TYPICAL CHILDREN.**¹ (Those who conform to the present stage of civilization, representing various racial, national, and individual efficiency types.)

Variation of Types: Sex types, national and race types, civilization levels, temperamental types, vocational types, cultural types, civic types, etc.

2. **PSEUDOATYPICAL (PARATYPICAL) CHILDREN.** (Those who only seemingly deviate from type.)

(a) *Children Whose Progress in School Was Hindered by:*

1. Change of schools.
2. Slower rate of development, without atypical or abnormal retardation.
3. Temporary illness.
4. Slight physical difficulties, such as lameness and minor deformities, slightly impaired vision and hearing, adenoid vegetations, etc.

(b) *Children of Unusually Rapid Development*, without genuine (pathological) precocity.

(c) *Children Difficult of Management:* Mismanaged, troublesome, spoiled, "naughty" children, without nervous difficulty or genuine perversity.

(d) *Neglected Children:* Those whose type fails of recognition, or who suffer from bad environment.

Pseudoatypical children may be rapidly restored to normal equilibrium, or made effective in their own right, by proper provisions.

3. **ATYPICAL CHILDREN.** (Those who deviate from type, pathologically, through impairment, without loss of the normal potentials.)

(a) *Neurotic, Neurasthenic, Psychopathic Children:* Overstimulation and precocity. Genius. Psychopathic personalities. Irritability. Excessive imagination and lack of mental and emotional poise. Hysteria. Lack of concentration. Negativism; contrariness. Perverse tendencies. Sexual precocity. Fears and obsessions. Defective inhibition. Tic. Motor disturbances. Vasomotor, sensory, and trophic disturbances.

This class must be distinguished from that group of Abnormal Children whose mental defect is in the form of well-defined congenital psychosis.

¹ Standard Dictionary: *Type*: One of a class or group of objects that embodies the characteristics of the group or class; an example, model, representative, or pattern, as of an age, a school, or a stage of civilization. *Typical*: Having the nature or character of a type.

- (b) *Children of Pathologically Retarded Development*: Impaired conceptual ability due to retarded brain development. Physiological retardation of the growth rate. Special physical causes: chronic catarrh, chronic difficulties of nutrition, serious chronic affections of vision and hearing, venereal infection, etc.

Any of these classes, through neglect or adverse environmental influences, including faulty training, may drop down in the scale of development into lower classes. In other words, the individuals composing them may lose their normal potentials entirely and degenerate into permanent defectiveness. On the other hand, starting out with normal potentials, atypical children may be helped to become efficient men and women.

B. SUBNORMAL CHILDREN.¹ (Those whose potentials are incomplete or permanently underdeveloped.)

1. **PHYSICALLY DEFECTIVE CHILDREN.** (Congenital causes.) Blind, deaf, dumb, deformed, crippled, paralytic, and epileptic children.

These children, although many of them are capable of maintaining an independent life and of attaining high efficiency within their limits, can never reach the perfect norm of human nature as long as their potentials are incomplete.

2. **CHILDREN OF ARRESTED DEVELOPMENT.** (Acquired abnormality or defectiveness.)

(a) *Pathological Classes*: Children born apparently normal, but having their development checked at some period by:

1. Hereditary causes, manifesting themselves at certain growth periods.
2. Special causes, as disease, fright, accident, etc.

This pathological arrest of development may be only partial, as in the case of children deformed by accident; then there will be only a condition of incompleteness, as in Group 1 of the Physically Defective Children; or it may be general, paralyzing mental and physical growth altogether.

¹The Standard Dictionary confuses "subnormal" and "abnormal." The Century Dictionary and Cyclopædia, however, defines "subnormal" as "less than normal; abnormal by defect or deficiency." This is in line with the author's use of the word, especially when we consult the definitions of other words having the prefix "sub" in the same dictionary. "Subnude," e. g., the word following "subnormal," is defined as "almost naked." In the same manner "subnormal" may be defined as "almost normal," lacking certain potentials which constitutes a defect.

- (b) *Submerged Classes*: Environmental influences have prevented them from attaining full maturity. (Stunted physical and mental growth.)

Children of arrested development will remain essentially subnormal, no matter how well they be educated, or trained, within their limits.

3. CHILDREN OF RUDIMENTARY OR ATAVISTIC DEVELOPMENT: The primitive type, representing mental, moral, and social instincts and activities on the savage, barbarian, or more or less uncivilized level.

Primitive Races. Atavistic Individuals. Atavism approaches the abnormal level. Atavistic individuals represent a reversion of instincts and capacities in spite of their birth from apparently normal parents, through hereditary or congenital causes.

This class constitutes the fringe of human society.

Groups A and B Compose Human Society.

- C. **ABNORMAL CHILDREN.**¹ (Those who deviate from the norm, or standard, of human nature.) Cretins, cretinoids; microcephalics, macrocephalics, hydrocephalics; idiots, imbeciles, feeble-minded; moral imbeciles and moral perverts; insane. Unfinished children.

Abnormal children stand outside of human society and cannot maintain an independent existence.

The diagram presented on next page will assist in understanding the argument of this chapter.

In studying this diagram and classification the following points may need further elucidation:

Limitations of Classification.—No classification can differentiate definitely *all* individuals. An absolute classification is an impossibility. There are types so unstable that they present varying characteristics at different times, and others which exhibit combinations of traits. Thus, we find blind children who are also feeble-minded, or geniuses; and neurotic children who have bodily deformities. There is a large assortment of *mixed types*. Besides, our knowledge of conditions of

¹ Standard Dictionary: *Abnormal*: Deviating from the natural structure, condition, or course; unnatural.

DIAGRAM OF SOCIAL STRATA
ACCOMPANYING A CLASSIFICATION
OF EXCEPTIONAL CHILDREN

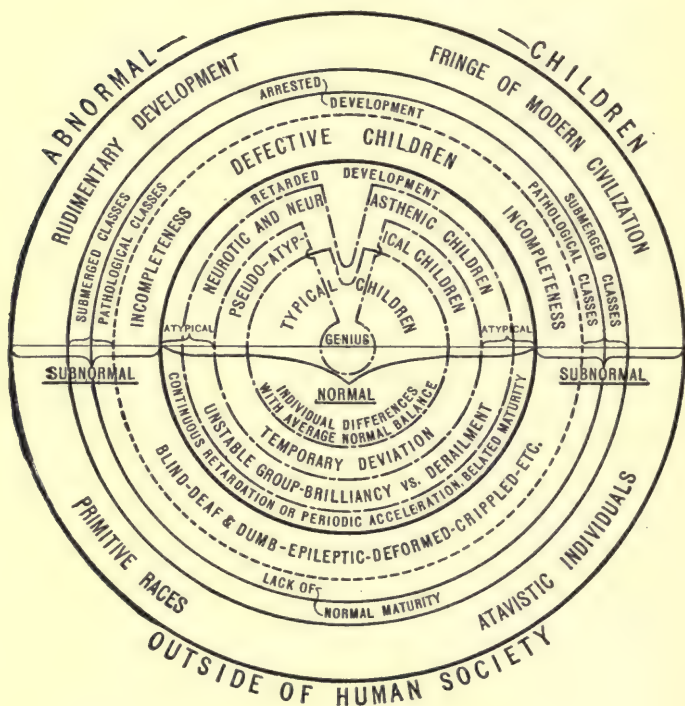


FIG. 2.

child life is still quite limited, and we can do nothing more than present tentative measures.

Normality.—In regard to normality, we may have to be satisfied to a certain degree with axiomatic statements, like the axioms upon which mathematical science is based. Yet, in the following chapter an attempt will be made to define normality in positive terms, and cog-

nizance will be taken of the fact that the term "normality" does not signify only one strictly circumscribed thing. The normal *child* in particular is a different being at different periods of his development, and normally so. Remembering the "culture-epoch theory" as outlined on pages 40 and 41, we shall readily see that there are normal changes obtaining in a child's development from infancy to maturity. In a manner, the child passes from the primitive type referred to under B, 3, of the foregoing classification, through a series of stages to modern normal efficiency. In the third of the developmental periods as distinguished by the author, "the human species differentiates itself, in the rising consciousness of each young scion of the common stock, into racial groups, differing from one another in consequence of influences that shaped the various primitive types. These racial differences are deeply ingrained in the souls of the children, and manifest themselves in the order of their natural succession. . . ." At the end of this period "sexual differentiation in the physical life and in interest sets in." In the fourth period, with the beginning of puberty, "the national spirit is born. There is now a maximum of life intensity. . . . Control and inhibition evolve; *thought* is born—real thought. . . . Gradually the child awakes to independent thinking and logical reasoning. The individual attitude arises, often with much overconfident self-assertion, in opposition to heretofore recognized standards. At the same time changes are noticeable which bring to light latent heredities of family traits. . . . We have, then, this sequence of developmental stages: species, race, nation, family, individual."¹

If this development is unduly retarded or accelerated,

¹ "The Career of the Child," pp. 94 ff.

we may be warned that there is danger ahead. Subnormality and abnormality in some of their types are caused by arrest of development at an earlier developmental stage. (Cf. Groups B, 2 and 3, and C.)

Normality implies the presence of all human potentials in the individual. These potentials are physical, mental, moral, emotional, volitional, in character. The typical normal child must have all his sense-organs in serviceable working order; he must have a normally functioning body as to digestion and assimilation, and the metabolic process in general; his nervous system and his brain activity must be well balanced. Completeness of potentials is the first condition of normality.

Potentially Normal Children.—Deviations from the normal standard through modification of type, or even through impairment of some potentials, do not invariably imply a corresponding decrease of usefulness for human progress. Quite the contrary. Even subnormal children, like blind and crippled, may grow up to be benefactors of mankind. There is the neurotic group which has furnished leaders of our race: poets, thinkers, inventors, patriots, enthusiasts. It is often a matter of circumstances; that is to say, environmental causes will determine which way the pendulum will swing—which way the potentials of an individual will gravitate. Here it is that family, school, and community forces will be determining factors. Here is the parting of the ways: one will lead to safe-breaking, the other to safe-making. The poet and the falsifier do practically the same thing—only from different motives. It has been said of a great surgeon that he had the instincts of a torturer and murderer turned to salutary account. The potentials of an individual are, morally and socially speaking, of a

neutral character. Higher efficiency in the sense of modern citizenship involves thought and motive—associations which will direct the individual potency along distinct lines of expression. This expression may be socially constructive, or a-social, even antisocial, destructive, negative. Thus, the genius and the crank may have the same potency—contrarily directed by the controlling forces of motive and judgment. It is not enough that there are active higher brain centres, that there is thought inhibiting reflex activity; thought and judgment must be socialized in the sense of community organization.

Subnormality and Abnormality.—Any child who is not conforming to an assumed type of “normality” is often loosely called “subnormal,” and the term “abnormal” is equally indiscriminately used. The author has taken pains to distinguish the truly abnormal child in definite terms. The term “subnormal” is carefully restricted to that group of children which represents limited, or incomplete, normality, *but not abnormality*. An abnormal child can have no efficiency in the sense defined in Chapter II; he can have only skill and training in skill. Many subnormal children, however, in spite of their limitations, may develop a very large degree of efficiency on a high performance level, as independent, self-directing human individuals. Abnormal children, or at least some of the abnormal types, like the idiots and imbeciles, represent as it were an “unfinished” condition—unfinished in foetal development.

It will be noticed that the term “mental defective” has not been used at all in this classification. The reason is obvious to any one who has followed the author’s argument so far. The term is vague and means nothing

definite. Sometimes a distinction has been made between a mental defective and an individual with mental defects; meaning that the former is defective right through, and the other has defects in restricted areas. The distinction is clever but does not solve the difficulty. For the "mentally defective" class, as thus discriminated, the term "abnormal" is clearer in a scheme of graded terminology. On the other hand, we can hardly feel justified in grouping individuals with mental defects in a special class. For when it comes to a close analysis, every one of us has some mental defect, that is to say, is inefficient along one or several lines, and natively so. Especially if we take school requirements for a standard, we shall find very few individuals who are not "defective" in some way.

The vagueness of the traditional terms "subnormal" and "mentally defective" becomes evident when we compare some of the definitions offered. The author refers to the many attempts made in circulars of school officers, training-school bulletins, and the like, to give some description of the classes of children for whom special provisions are made or contemplated. A recent statement of this kind is contained in an otherwise very meritorious study of truancy, by the field-worker of the Committee on Hygiene of School Children of the Public Education Association, New York, of which the author is himself a member. The mental normality of the truants studied had been "determined" first by the use of the delusory Binet Tests, which will be discussed in a later chapter of this book; the results of these tests "were verified by school records, family histories, and opinions of teachers and principals familiar with the children." The report claims that 43 per cent of all the

150 cases studied were actually feeble-minded and 8 per cent were border-line cases. Then it says: "One of the salient characteristics of the mental defective is never to do anything regularly and on time except through training and habit formation or from outside compulsion. A methodical and well-ordered life is essentially the product of a normal mind." This view is so obviously one-sided that it hardly needs detailed discussion; or, rather, the obvious is usually most difficult to explain. But if this definition were true the insufferable pedant who is so methodical that everything goes by clockwork, and that the least disturbance of his minute regularity disturbs the even temper of his mind, would be the acme of perfection, the prototype of normality; while the unfortunate poet or artist, with his happy-go-lucky Bohemianism, would have to be set down as feeble-minded. As far as the author's own experience goes, "training and habit formation" are the keynote of *all* normal education.

A Caution.—This classification is intended mainly for *children*, with particular reference to their school career. While it is applicable to adults also, and demonstrates social layers and civilization levels, there are certain qualifications to be borne in mind. Congenitally insane children, *e. g.*, are plainly abnormal; insane adults may be the product of acquired disease, or of neglect of neurasthenic and psychopathic conditions in childhood. Such conditions are observed in the group of "atypical" children. Neurotic and neurasthenic children exhibit symptoms of unstable nervous, mental, and emotional equilibrium and may, through environmental causes, develop true psychoses, although perhaps only for a period of time and not permanently.

No Rigidity of Types.—This classification does not imply rigidity of types. In this it departs fundamentally from some of the other attempts at classification. Meumann, *e. g.*, distinguishes the following *strictly rigid* types:

- | | |
|-----------------------------------|----------------------------|
| <i>A. Feeble-Minded Children:</i> | <i>B. Normal Children:</i> |
| 1. Idiots | 1. Dull (below average) |
| 2. Imbeciles | 2. Average |
| 3. Debiles (Morons) | 3. Above average |

Among the normals he differentiates a number of types, according to their leading traits (physical, sensory, motor, memory, observational powers, attention, imagery, etc.).

While, naturally, there are some types whose variability is but slight and largely on the level of skill, and while it is also true that the abnormals, as such, and many of the subnormals, on the basis of present knowledge, can hardly be expected to change type, it must be admitted that further experiment and research work may lead to surprising discoveries. It has already been shown that operative measures, in relieving pressure on the brain, or irritation of the sexual organs, may change the character of a child essentially. Weak-mindedness caused by syphilitic infection has yielded to specific treatment in recorded cases. The study of the secretions of the ductless glands has given opportunity for interesting experiments with low-grade children. Blindness and deafness have been cured.

The *function of training* must not be overlooked. Proper education will go beyond the mere limit of skill and performance levels. It may elevate the volitional and emotional elements of the mind. Judgment and motive may be developed; primitive instincts may be

brought under the influence of higher associations. Meumann's very terminology is so vague, especially as far as his "normal" children are concerned, that there is a wide margin for variation.

We must concede that, within certain limits, individuals of lower groups can be educated to higher grades. This is especially true of the normal group, which includes the typical, pseudoatypical, and atypical children. The submerged classes as well as the representatives of rudimentary, primitive development may be gradually elevated to higher planes of civilized life. The solution of this latter problem cannot perhaps be hoped for within the life-span of an individual, but must be accomplished mainly by educational and social processes which extend through generations.

There is also frequent backsliding or dropping down of individuals of higher groups into lower groups, through lack of education or opportunity, through illness, or through other unfavorable circumstances. Even typical children may lose their balance and be vitiated in some manner.

The recognition of these two facts, of the ascending and the descending scale, means the stating of the gravest and greatest of social problems.

Terminology.—One word in regard to the terminology employed: ordinary dictionary definitions of the terms used in this classification are lacking in precision. It is therefore allowable to give the terms here suggested for designating the different groups a definite meaning and content. The term "atypical" has been in the past used mainly in biological terminology, also in morphology. Since first suggested in this classification, in 1902, it has been taken up by others and abused by some as a

euphonic term for abnormal and mentally defective children. This is very unfortunate and really inexcusable.

The Diagram.—Our diagram represents the circle, or compass, of human society. Outside the circle is the *abnormal child*—the non-human group, so to speak, the group of the socially inefficient. Abnormal children cannot enter the province of normal human activity and competition as self-directing members of society. Many may be made self-supporting, in a measure, as even domestic animals are, *under guardianship*; but they will require custodial care permanently.

In the centre of the circle, as in the bull's-eye of a target, representing the aim of human development, stands the complete, well-poised normal child of the twentieth century, the type of modern civilization. Within the limits of an average balance of potentials there is, of course, a great number of variations, each individual differing to some extent from the mathematical average, with excellencies and proportions of his own. But there is a sufficient natural poise to prevent eccentricity or derailment. When there is such a degree of disturbance of the normal equilibrium that the pendulum of reaction will not swing back in the proper measure, exceptionality begins.

It is well to state here with particular emphasis that *the "typical" child must not be confused with the "average" child. There is no such living being as an average child.* Averages and means are mathematical computations derived from massing together a number of variations, and represent no actualities, except in terms of quantitative analysis for statistical purposes. In fact, the measure of progressiveness of any people is found in its variability from the average. Doctor C. S.

Myers, in discussing the subject of differences on racial and sexual variability, makes the following important observation:¹ "A civilized community may not differ much from a primitive one in the mean or average of a given character, but the extreme deviations which it shows from that mean will be more numerous and more pronounced."

A "typical" child in the sense the term is used in this classification is, in the first place, the normal child described in the following chapter, endowed with qualifications commensurate to his age and to the developmental period his growth-rate warrants (unless this rate is exceptionally retarded or accelerated).² But he is not only a normal child as such, irrespective of the century he lives in, but a *modern* child, distinct from the child of previous culture epochs in the development of his race. For each race of to-day this standard is more or less unlike. A typical American child of the present generation is different from a typical Chinese, Japanese, Italian, Spanish, German, French, or English child of the same generation. This is one of the reasons why we cannot apply the same standards of mental measurement, or exactly the same methods of education, in different countries or for different racial and civilization layers, without laying ourselves open to grave error. To exemplify: the transplantation of the "little red schoolhouse" of New England among the colored people of the South in the reconstruction period has damaged the colored children more than it has helped them. And "Montessori methods" and Binet Tests cannot be simply

¹ Quoted in Mayo's monograph on the American negro, referred to in the previous chapter.

² Cf. description of "culture epochs."

imported for ready consumption by American communities like French *lingerie*, a Havana cigar, or a bottle of Chianti.

Each nation has a certain level on which the majority of its members will be found in intellectual and temperamental caliber and in social efficiency, as measured by national community demands.

There are *variations upward, downward, and sideways within the province of national normality*. Mention will be made in the next chapter of the difference between the *normal boy* and the *normal girl*; this difference must also be recognized in the racial and national types. Then there are the differences in aptitudes and attitudes which constitute type variations in the matter of vocation, civic relations, and social endeavor. Within the type confines there may further be distinguished different *grades of efficiency and performance levels*, low, mediocre, and high, according to endowments.

The concentric circles, or rings, of the diagram represent the different layers, or strata, of human society. They indicate relative distances, or deviations, from the normal standard as exhibited by the child of normal balance. Neither the distances nor the areas shown here can be taken as indicating exact numerical proportions. But the farther a layer is removed from the centre the greater is the deviation.

Some of the deviations will not destroy but merely hazard the possibility of normal equilibrium. All those children whose deviations are not necessarily permanent are therefore still included in the normal group, representing *potential normality*. They represent merely deviations from *type*, apparent or genuine; not from the standard of human nature.

It will be observed that from the rings comprising the pseudoatypical and the retarded groups loops extend into the inner circle of typical children. The meaning of this, of course, is that these groups represent the potential normality mentioned in the preceding paragraph, and that children of these groups may be brought in line with the typical group. Further, from the ring comprising the neurotic group of atypical children, the loop extends into the very centre of the diagram. *This centre represents genius*: the individual of exceptional powers, Nietzsche's "Ueberschensch" (superman), not altogether normal in the sense of an even equilibrium, but of tremendous importance for the progress of humanity—the most forceful variation. The author has avoided the use of the recently much-applied term, "supernormal," which he considers self-contradictory: nothing can be more normal than normality, as there can be nothing whiter than white. In fact, the genius is a deviation from the normal, often pathologically so, paying for exceptional brilliancy by sacrificing other normal faculties. According to the ancient French proverb, "*Les extrêmes se touchent*" (extremes touch), genius is related to insanity and even feeble-mindedness. Yet, it is also the fulcrum of human progress.

The often amazing unconventionality of artists, their Bohemianism, their reckless, happy-go-lucky conduct, remind one forcibly of primitive characteristics. The poet, the musician, the dreamer, the painter, the sculptor, the actor—all of them are closer to the elemental forces of human emotions, those that have come down to us from the beginning of the race, than the people who are bearing the burden of social repression; and they are often as irresponsible as children who, in their

way, are less distant from the primordial instincts than the conventionalized adult.

Each of the groups, or types, mentioned in this chapter will be discussed in this book.

CHAPTER V

THE NORMAL CHILD

The Wail of the Well.—Attention has recently been concentrated so exclusively upon “mental defectives,” “subnormals,” “abnormals,” and physically defective children, upon the consideration of social evils of all kinds, that the normal and the potentially normal children from whose ranks the sturdy citizenship of a nation is recruited, have failed of satisfaction of their just claims. Whatever did not fit into a preconceived system was branded as abnormal, so that the many variations of normality remained undefined and unrecognized, and millions of normal children did not receive their due, becoming predestined for failure. The following witty little poem (published in the *American School Board Journal*) well expresses this ill-proportioned solicitude:

“Johnny Jones has lost a leg,
Fanny’s deaf and dumb,
Marie has epileptic fits,
Tom’s eyes are on the bum.
Sadie stutters when she talks,
Mabel has T. B.,
Morris is a splendid case
Of imbecility.
Billy Brown’s a truant,
And Harold is a thief,
Teddy’s parents gave him dope
And so he came to grief.
Gwendolin’s a millionaire,
Jerald is a fool;

So every one of these darned kids
Goes to a special school.
They've specially nice teachers,
And special things to wear,
And special time to play in,
And a special kind of air.
They've special lunches right in school,
While I—it makes me wild!—
I haven't any specialties,
I'm just a normal child."

Definitions of Normality.—One shall look in vain in most treatises on "subnormal" and "defective" children for a clear statement of what normality consists in. More or less helpful definitions of various degrees and kinds of defectiveness have been given; the clearer, the farther away from normality the defect has taken the child. Thus, we are better informed about idiocy and imbecility than about normality. The definition of normality was left to inference; we were supposed to make it by implication. Or, to put it in another way, we were supposed to reach a definition of normality by the process of elimination, that is to say, by enumerating what a normal child does *not* lack. Doctor Lightner Witmer, in a recent article, speaks of two "normality scales," (1) the deficiency scale, (2) the insanity scale. He says: "I have called these scales normality scales, rather than abnormality scales, because the study of the feeble-minded and the insane, whereby we establish different degrees of abnormality, is of less concern to the science of psychology than the study of so-called normal individuals. For instance, we would like to know how many deficiencies an individual may exhibit and how unbalanced he may be, and yet pass for normal." This negative diagnosis does not satisfy Doctor Witmer himself,

and he promises a later contribution on these two normality scales: (1) The sufficiency scale, and (2) the equilibrium scale.

What is a Normal Child?—The terms “normal,” “typical,” “average,” and many others of this kind have been loosely used to express what has never been fully defined. There are various axiomatic assumptions as to the meaning of the term “normality.” One of the positive evidences of normality has been thought to be success in school. One has presupposed that there is a normal age for every school grade. If we assume, as is usually proposed, that the normal entrance age in the first grade is six years, the normal age for the second grade would be from seven to eight; in the third, from eight to nine, etc. On this basis a child would normally graduate from the grammar school at the age of fourteen. Any deviations from this scale would be “sub-normal,” or “abnormal.” If a boy of ten and one-half years who ought to be “normally” in the fifth grade, is found to be still in the second, he is called “three years below normal,” or “three years over-age.” The “normal” child, on this supposition, goes to school in a regular way, and at the regulation age. He learns to read and write after a fashion, also to add and subtract and multiply and divide. He learns something about the geography and history of the world and its peoples, is familiar with ordinary facts of nature, may learn to draw and paint and sew and hammer, and what not—to the delight of his teachers and parents. He will grow up to be an “average” workman or clerk or storekeeper; he may go to “high school” and “college”; he may become a merchant, minister, doctor, or politician, and make money, and have a position in this philistine world

of ours. If it's a girl, she will be a housekeeper and homemaker of the traditional kind; or a professional in any one of the many fields of labor now open to women. At least, this is the assumption.

School Success Not a Safe Standard.—Such a view of normality is based upon the assumption that school grades are a safe measure of intellectual caliber—which they are not. They are an artificial standard based upon efficiency, or even mere skill, in certain limited pursuits, like reading and writing. Average attainments are deceptive. A child who succeeds in passing ordinary requirements might be called a “conformist,” one pursuing the course of least resistance, a mirror of circumstances. As a matter of fact, no one of the “ordinary” children is an “average” child in *all* fields of activity. By giving the conformist a more thorough testing and opportunity, strengthening his will-power and self-confidence at the same time, we may find that he possesses hidden capacities which might, if properly recognized and trained, have made his life very different from the humdrum mediocrity to which he was condemned. We shall discover that most of these children really represent very different types of mind, and that not any two of them are quite alike. The conformist is not necessarily a “normal” child at all—he may, for all we know, be even feeble-minded, or an extraordinary mixture of contradicting elements which invalidate each other.

“Mental Age.”—Another method of determining normality by positive means has been suggested by psychologists like Binet and Simon. After testing a large number of French children, these professors felt justified in establishing norms for a “scale of intelligence” which

was based upon the theory that normal children of a certain age must be able to meet certain performance tests. Thus, they proposed the idea of "normal mental age." In a later chapter this theory and the tests proposed by Binet and Simon will be further discussed. Here the author will only again quote from Witmer's previously mentioned article to show that this theory is not generally accepted. He says: "The Binet testers assume not only that they are testing intelligence, in which assumption they are mistaken, but also that they can employ one and the same test in order to distinguish the feeble-minded from the normal child, and to distinguish the ten-year-old child, whose mental age is eight, from the ten-year-old child whose mental age is ten. Feeble-mindedness is not backwardness, although the feeble-minded child is undoubtedly backward. A ten-year-old feeble-minded child who has a 'mental age' of six years is not at all like a normal child of six. The diagnosis of feeble-mindedness will be based upon more than the mere fact of four years' retardation. The performances of the feeble-minded are qualitatively and quantitatively different from the performances of normal children."

We need tests which will assist in diagnosing a child's mentality, and the second part of this book will treat of this method of investigation more fully. But the idea of "mental age" is an illusion if restricted to the chronological standard, and if applied without consideration of difference of type.

No "Average" Normality.—In endeavoring to determine what "normality" implies we must be very sure to understand that there is no such thing as "average" normality. An "average" is an arithmetical abstrac-

tion; it has no existence in reality. Normal individuals may differ very widely in kind; they may even exhibit certain defects and difficulties without exposing themselves to being branded as "subnormal," or, indeed, "abnormal." *Normality consists in certain positive assets of the individual which give him competency* conditioned by a measure of human efficiency which will enable him to establish and maintain an honorable position in life and society. This competency may be potential only, and depend to a large degree upon opportunity for right training and self-manifestation, owing to the complex conditions of our modern life, as has been set forth in the previous chapters. But even potential normality is normality, and the incompetency may be that of the community, not that of the individual whom the community fails to socialize.

In the chapter on "The Feeble-Minded Group," the distinction between the abnormal and the normal child will be expressed in this way: that the latter possesses "common sense," the former does not. It is perhaps difficult to define "common sense" (which has been called "the most uncommon thing of all"), just as difficult as it is to define normality. But every obvious thing is difficult to define. Yet we may, after all, arrive at some definite conclusions.

Normality vs. Maturity.—A *normal child* is different from a *normal adult* in that he is immature from the standpoint of adult life, yet conforming to biological laws of growth which determine his development. Again, a *normal man* differs from a *normal woman*—a *normal boy* from a *normal girl*, in instincts, attitudes, capacities, methods of self-expression. Whatever we may think about woman's emancipation and competition

with man in public life, the sexual differences will never be eradicated, nor should they be. Any attempt to put the sexes on the plane of equality in kind, in competency, in efficiency, will be fraught with danger. Their social functions will differ eternally—which does not imply, of course, that they have no interests and rights in common. Quite the contrary. But *masculine normality* and *feminine normality* are certainly not identical.

Said the Minneapolis *Tribune* wittily: "Boys have not reached that stage of civilization which afflicts girls. . . . Boys can be set to amuse themselves just as they could in more primitive times. Boys, indeed, offer a fixed standard of conduct which the mutabilities of thousands of years, including divergence of race and climatic conditions, have not been able to alter. We see the same characteristics in the boy of the slums, up to a certain age, that we do in the son of the millionaire. It is only when boys grow up that they yield to environment and habit. Here are some of the things common to every boy which civilization has not been able to affect:

Every boy hates to be dressed up.

Every boy will fight at the drop of the hat.

Every boy hates girls.

Every boy will lie to save himself from punishment.

Every boy throws stones.

Every boy says naughty words.

Every boy will associate with any other boy he likes, regardless of anything, such as money, position, etc.

When, say, up to twelve, a boy does not conform to these rules, there is something the matter with him. Regarded from the standpoint of the other boys, he is 'no good.'

One must understand these things from the point of view of the "culture-epoch theory" as previously submitted, to appreciate them in their right meaning.

A girl is a very different creature, and cannot understand a boy at all. She is much more of a conformist than a boy. That is one of the reasons why under present school conditions girls are more successful and happier in school than boys are. This success is helped along by the feminine atmosphere prevailing in our schools, owing to the predominance of female teachers. Because woman is so different from man, she will never fully understand the male attitude to life—and man is forever puzzled by the surprises he meets in the conduct of women. This is a contributory factor in the misunderstandings and frictions arising between the two sexes in grave questions of public concern, and in the unwholesome developments which occur when one or the other sex allows itself to be dominated by the other in social valuations which each sex must normally approach from a different angle, and in which there will never be an absolute harmony of opinion and feeling. The “temperance” movement, the problems of prostitution and crime, and others of this type, often exhibit these radical differences of attitude.

An effeminate man is an abomination, and a mannish woman is an insult to womanhood. Likewise, while girls must be tomboys at a certain period of their lives, and boys will manifest girlish traits of primness and niceness after emerging from the “Flegeljahre” period (period of awkwardness and boorishness), these exhibitions will merely be indexes of transitions on the road to maturity. Were they to become permanent, they would indicate an abnormal arrest of development. For both boys and girls are very different, normally, at certain different periods of their lives.¹

¹ Cf. “The Career of the Child,” pp. 97 ff.

Racial Standards.—In addition to sexual differences, there is the difference in race and nation. Folk and race psychology reveals the distinctive traits which make a German a different being from a Frenchman, and which distinguish northern races from the Mediterranean type. There is such a thing as a “normal” Englishman as against a “normal” Italian. Sometimes one nation cannot understand another nation at all. Within the nations there are again differences of group normality, in accordance with the various civilization levels of which the author treated in Chapter III. In our own country the “normal” Southerner differs materially from the “normal” Yankee, and their lack of mutual understanding led fifty-seven years ago to the greatest crisis this land has ever passed through.

Again, within the national confines, in the ordinary life of people, we are able to distinguish further types. Physiognomy and experience teach us to distinguish between the workman and the scientist, between the school-teacher and the office girl, between the phlegmatic and the sanguine temperament. Each occupation is said to put its stamp upon its representative. This fact may be admitted, but we may be allowed to reverse cause and effect, and to believe, with Professor Mayo, that the choosing of an occupation may in itself be related to an individual's inward capacity for response; in other words, omitting conditions of environmental pressure or example, a different kind of man will select the profession of teaching in preference to the occupation of blacksmith, and this difference in type will appear in his outward characteristics. Studies of temperamental types, including the spendthrift as against the miser, the fanatic as against the reactionary, are leading in the same direction.

Various Conditions of Normality.—There are, then, conditions of normality relating to sex, to age, to race and nationality, to occupation and type. Take the occupation of musician. We may assume a normal musical type, the individual representing this type having the equipment of the true musical ear, of the perfect rhythm, of artistic conception, of absolute muscular control in the matter of musical performance, etc. Another individual may lack some of these prerequisites, and therefore be a mediocre musician, perhaps only a skilful mechanical performer without musical creativeness, or utterly fail in this form of efficiency. But he may make an excellent physician, perchance with some musical taste. He embodies another type, for which there is another norm to which the normal musician cannot attain. This fact must be borne in mind in the matter of vocational training and guidance.

It must never be forgotten that “normality” is not a single, simple thing. It implies many distinctly different things. *It is of various kinds.* There are, of course, individuals of no outspoken character, such as will do mediocre work in almost any department of human activity. There are the “conformists” who will readily fall into any groove. It is these who have sometimes furnished the standard of “average” normality. But their main characteristic is this very mediocrity, with a leaning toward philistinism.

Efficiency and Normality.—It is unnecessary to speak again of “potential normality.” The subject has been treated so fully before that no further argument would add anything essential. Details may be left to the treatment of special types in the following chapters.

But those who have followed the argument at all will

now agree that normality is determined by *individual competency*. This competency is the result of *individual efficiency*—efficiency of such a degree that the individual may maintain his place in the environment to which he belongs, being able to meet all changes that may affect his environment. This will make him a “typical” representative of his time, age, and nation.

He must possess a *body* of sufficient strength and health to meet emergencies without defeat; and a *mind* equally sane, so that it would not be thrown out of balance under tension. He must possess *initiative* and *circumspection*, the capacity for *forethought* and *planning*, for *finding his place* and *understanding a situation*. He must be able to *learn from his own mistakes* as well as from those of others. He must have *resources* which can be called forth in time of need.

There must be a sufficient degree of *plasticity* and of *capacity for growth* so that the individual may adjust himself to community development. He must have stamina of energy which will make him a *creative force* in this process of social advancement; in other words, he must furnish his quota of efficiency increment. Skill alone is insufficient—even the lowest of beasts show skill in some things.

Let us understand that these requirements do not imply in every instance a high performance level. We must not mistake the normality of a typical individual for the exceptional force of the leader. Leadership involves sublimated normality, so to speak.

The efficiency of the normal individual may show itself in different directions. First, there is *occupational efficiency*, such as will give him and his family sustenance and security of life. Then, there is *parental efficiency*.

As a parent he must be able to produce healthy, normal offspring, and to establish a sane, natural family life with all the educational elements of the home in proper working order. Thirdly, there must be *social efficiency*, that he may do his share as a unit in a community, in a political organism, as a citizen, as a human being, in his relations to his fellow citizens, his fellow men, the world at large. And, finally, there must be his own personal *cultural efficiency*, which ought to be commensurate to the culture level of his environment, and should also be of the expanding kind, so that he may be a factor in cultural advance.

The same individual may not comprise within himself all these factors of efficiency, at least not in the same degree, and yet be a positive asset to his social setting, producing an efficiency increment which is distinctly measurable. He may lack public spirit, yet be a good father and a good business man; or he may be public-spirited without having much cultural efficiency. But the health of a nation depends upon the blending of these various types of efficiency among its citizens to make it efficient as a nation.¹

¹ An illustration of this fact is given in the *Plainfield Courier-News* of May 27, 1915, written, as is seen from the date, after Italy had entered into the European conflict, and by a man whose sympathies are strongly pro-English:

"Whether the sympathies of Americans lean toward Germany or not, there is one strong point on which all can unite in giving Germany its due award of admiration. As an example of co-operation and organization in all lines of human endeavor for the advancement of their own country, Germans lead all nations. Only the most complete organization and disciplined mental attitude could have made such a stand against the odds which Germany is facing. . . . A nation which can develop and perfect the details of such thorough organization and carry its commercial system to foreign lands cannot be ruined by even such disaster as Germany is now suffering, and will suffer in much greater

The "potentially normal" types must be similarly organized in the manner described in Chapter II. Even the "subnormal" types can be articulated in a national system of efficiency, as has been shown in the previous chapter and will further be elucidated in the remaining chapters of this book.

If this definition of normality is tenable, we shall understand better what a *normal child* is. A normal child must possess this same element of efficiency. But as a child's main function is *to grow up* in a healthy fashion to be able to take his place in life, his main efficiency must be found in this very *capacity for healthy growth*, according to his special genius, to his special type. *This capacity must never become arrested* during the entire life of the individual. Anything that interferes with healthy growth, with the unfolding of the individual psyche, is a danger-signal.

degree during recuperation. If defeated, Germany will settle down to business and energetically try to recover her standing among the nations. She will continue to give the world a lesson in the efficiency of organized and intelligently directed energy."

CHAPTER VI

POTENTIALLY NORMAL CHILDREN

The previous chapters have endeavored to illustrate the problem of normality, and of normal competency and efficiency; as well as the general principles of deviations from the normal standard. It has also been shown that there is a considerable percentage of children whose educational success, and whose chances of reaching the level of efficiency for which they possess latent competency, are endangered by various causes. Many of these causes are remediable, if promptly recognized; others predestine a child to more or less complete failure. It is therefore imperative for the educator to familiarize himself with the symptoms indicating danger, so that those children who possess potential normality, that is to say, those whose handicaps may be relieved, would have their chance.

Pseudoatypical Children.—Among the potentially normal children the author has first enumerated the *pseudoatypical* or *paratypical child*. The classification submitted on pages 60 to 64 distinguishes several groups.

Change of Schools.—The American school organization which leaves the administration of schools to State and local bodies, without any attempt at national equalization, is characterized by a considerable variation of standards. That is to say, a fourth grade in one place differs from one in another place, in requirements, pupil composition, teaching quality, etc. When a child moves with his parents to another district, even in the same

metropolitan community, or applies for admission to the school of an entirely different district, he is confronted with difficulties of adjustment if placed in the same school grade from which he migrated. His new class may be scholastically higher or lower, according to circumstances; rarely exactly alike. Adjustment, as classes and courses are organized now, is primarily a mechanical process in the matter of details of knowledge; thus, the common practice has been to consider the new-comer scholastically deficient, and to put him in a lower class. It would have been much wiser to consider rather his mental maturity and have him grapple with his problems of adjustment on that basis. Some judicious coaching and special help will easily even out difficulties of this kind.

Other Causes.—The pupil who has difficulties of ready adjustment to class standards in other ways is in many cases an equally simple problem, scholastically considered. The child of *slower mental and physical growth* must be given more time and much encouragement, so that no stigma be attached to his tardiness. It is, of course, futile to expect all children to progress mentally at the same rate. Such a condition is just as impossible as to expect that the bodies of children should grow equally fast and to equal proportions. Every mother knows that she may have to buy ready-made clothes of the twelve-year-old size for her fourteen-year-old boy, or a fourteen-year-old size for her child of twelve. In a similar way minds grow at different rates. Some will grow faster than the average and others more slowly. The slower child is not necessarily deficient, or even lacking in talent and power. Some of our best minds were slow growers in childhood—like the slow-growing

oak, which is a king among the short-lived minor trees. Among the "distinguished dunces" who gave their mediocre schoolmasters so much trouble while they were school children, may be enumerated such men as *Webster* (Case 4), *Beecher* (Case 5), *Fröbel* (Case 6), *Linnaeus* (Case 7), *Volta* (Case 8), *Burns* (Case 9), *Balzac* (Case 10), *Edison* (Case 11), and *Walter Scott* (Case 12), all of whom were dullards in youth.

Under the caption "Speed as An Element of Weakness," Doctor M. W. Van Denburg has contributed an investigation which he introduces by the scriptural quotation: "The race is not to the swift, nor the battle to the strong; . . . nor yet favor to men of skill; but time and chance happeneth to them all." Among other things he says in the course of his argument:

If *Charles Darwin* (Case 13) were a pupil in one of our public schools to-day, the chances are nine out of ten, that he would be set down as a very commonplace, dull boy. His mind always moved slowly and with extreme caution from his earliest school-days. This was his individual constitution.

If *John Stuart Mill* (Case 14) and *Herbert Spencer* (Case 15) were two boys in the same grade, Mill, who would be several years younger than Spencer—and who for a moment doubts that the brilliant, ready, quick-witted Mill would far outstrip the shy, nervous, plodding Spencer: the one would become a petted little pedant, and the other would be plunged into the deepest discouragement. These are not altogether fancy sketches. . . .

Nothing is more certain in psychology than the vast difference in the rate of speed at which different minds work. This is not at all a habit by any means. It is to a far greater degree an endowment.

Suppose in public examinations as much time was given as is desired by each applicant, and thereby quiet of mind on this point assured. Suppose in school work the difference in natural endowment, in physical energy, in physical health, in previous

training, in home training, and, above all, the natural gait of the mind were taken into account in each case. Suppose accuracy, and reliability, and completeness of grasp, and sincerity of purpose were put in their proper places in estimating the value of work accomplished, the Darwins would not then always be set down as dunces, neither would the Mills so enormously outrank the Spencers.

A child who has missed part of his school opportunity by *illness* or *accident* should be given all the help necessary to make up for his loss. It seems hardly in line with the general purpose of this book to devote much space here to these classes of seeming failure, as they are largely a matter of proper school administration. They are mentioned for the sake of completeness, and will again be referred to in the last part of the book, which is devoted to provisions for exceptional children.

The same may be said of the cases of those children whose difficulty consists mainly in their *unacquaintance with the language* of the land to which their parents have emigrated; yet here the element of racial difference, in attitude, aptitude, temperament, historical tradition, civilization level, etc., enters gravely into the problem, so that their proper education is a much more complex matter than would appear on the surface. Of provisions for those who deviate from the type by the fact that they are unusually *rapid growers*, mention will be made in a succeeding chapter. Again, the *neglected child*, the *undernourished child*, the child whose home lacks the hygienic atmosphere, will be discussed later, in connection with the other factors entering into their problem. It may simply be said here by way of parenthesis that the institution of school lunches, school baths, and school playgrounds, as well as of social centres, will work won-

ders for this class of children; not to forget the helpful work of the neighborhood guilds and similar organizations for social uplift, *provided they do not smack of smirking charity, but are the expression of the consciousness of a social function and duty.*

Lack of Breadth in School Organization.—It is a different matter when we discuss those children whose difficulty lies in the fact that *the school does not reach them.* This point has already been made clear in preceding chapters. But it is very well for teachers and school administrators, as much as for parents, to become very certain in their minds as to the *causes* which may produce a child's difficulty in the school as such. He may belong to a type which is not yet recognized in our traditional courses of instruction. His case may reveal the fact that we need another kind of school organization. How these differences of type may be discovered, and what provisions should be made to eradicate present defects, will be set forth in the course of the discussion presented in this book. *Here we are dealing with defects of the school, not of the child*

For all these children may not only be potentially normal, but altogether typical and complete as representatives of their type. Their failure in life would be due to *maladjusted educational experiments* made upon them. *The wisdom and judgment of the educator are in question when all is told.* Very few of us have as yet a clear knowledge of the physical and psychical life and evolution of the child, and faulty reaction on the part of the child may mean that we have handled him incorrectly. The *training of teachers* is still a grave problem in our country, in spite of the fact that normal schools, teachers' colleges, and university courses in pedagogy are

being perfected more and more every year. Still we have only too many teachers of limited training and experience; and often the tyros, those who have the least basic knowledge of the child mind, are placed in the kindergartens and primary classes where the foundations of mental work are laid. The mistakes made by these novices in teaching, in experimenting with the precious budding minds, are legion, and only too frequently warp a child's conception from the very start.

Professional Training.—Teachers, however, do receive, at least in large numbers, some sort of professional training. But *parents* are, as a rule, *sadly deficient* in such training, and often lack the wisdom of understanding and handling their children properly. *Mothers' clubs* are often mostly composed of women who have already made their fundamental mistakes with their own children; and *fathers' clubs* there are none. A few attempts have been made to establish *mothercraft schools*, which so far are attended by an infinitesimal fraction of the prospective mothers of the land. The author has never heard of *fathercraft schools*. Thus a child's chance of being himself, instead of being moulded according to the whims and prejudices and notions of his unenlightened elders, is very slim.

No wonder, then, that we have so many children who are *difficult of management*—"naughty," troublesome, spoiled children. Some of them are troublesome because they do not know how to employ their perfectly normal and legitimate impulses and activities. A child is naughty to parents and teachers on the same principle that will make a gas-tank explode when touched with a burning match—it is the only natural method of response to a foolish method of approach!

Sense Defects.—When it comes to difficulties in the province of sense reactions, great caution is needed. Defects of this nature are more common than is generally supposed; they are apt to escape attention, the children themselves hardly being conscious of having any defect; they have no criterion for comparison. A hard-of-hearing child learns the art of lip-reading almost instinctively, and is therefore producing, to himself and to others, the illusion of being able to hear. Many cases have come under the author's observation of children whose power to hear articulate speech was so greatly diminished that they were almost deaf; sometimes they were suspected of some slight defect in the matter of hearing, but as a rule both their parents and their teachers were absolutely amazed to learn of the extent of their infirmity after the application of proper tests. Children of defective hearing and vision are often accused, unjustly, of course, of inattention, stubbornness, laziness, and backwardness.

Observational Attitude.—To be able to make a more detailed study of handicapped children we must first develop the observational attitude of the diagnostician, and train ourselves to consider everything we cannot readily explain as a *symptom* to be studied. For every symptom we must train ourselves to look for a *cause*. Proper observation implies a careful distinction between *facts observed* and the *explanation* we may give them. It is a very common error to *substitute our interpretation of a fact for the fact itself*, and thus records of children are often vitiated. To say: to-day the child was naughty, or annoying, or lazy, or what not, means nothing at all. Such a statement implies a foregone conclusion, a judgment, not a record of fact—unless of the fact that the

child's conduct *affected the recorder* in a certain manner. Manifestations on the part of the child which may be displeasing to us are not necessarily expressions of a child's evil genius or defectiveness. The entire idea of *discipline and punishment* is undergoing a change. Only one who can inspire the child with confidence and who puts the child under observation absolutely at his ease, will gather reliable data.

Atypical Children.—The various groups of “atypical” children will be further discussed in the following chapters. Even with them, however, we may first emphasize the necessity of studying the sense-reactions of each child. The acuteness of the two principal senses of vision and hearing should be determined by the ordinary tests, which are so simple that the preliminary work can be done in any school or home. Eye-strain is frequently accompanied by headaches; chronic headache is therefore a danger-signal. The other special senses—taste, smell, touch—not to speak of the muscular sense, the temperature sense, the sense of balance—rarely receive the attention they deserve. Yet we often find curious defects which may be considered as indicative of incomplete potentials, and consequently of incomplete sensation, making the sufferers really subnormal. If we remember that under certain circumstances we may have to fall back upon one or more of these neglected senses, as in the cases of Laura Bridgman and Helen Keller, we may well be reminded of their importance. The sense of touch is, indeed, the most fundamental of all senses, from which the others have become differentiated in the process of evolution.

Blind and Deaf Children.—Although belonging to the subnormal group, blind and deaf children may possess

such other splendid mental and physical endowments that their competency is often considerable, and the efficiency increment they may contribute to social life and progress represents values as great as those of normal children. They may therefore justly be mentioned in this connection.

Real blindness and deafness are defects which deprive a child of potentials which are necessary for completeness of sense-perception and mental conception. For them some elements of human knowledge will forever be eliminated, at least in their direct bearing upon thought, and they will depend upon the experience of others along these lines of observation. These vicarious experiences must symbolize to them what can never be their own experience. For this reason the author has placed them in the subnormal group, as physically and physiologically defective, with a corresponding psychologic deprivation. This does, however, not imply at all that they are more prone to be also mentally defective than seeing and hearing children. *Helen Keller* (Case 16), whose case has demonstrated better than many another the wonderful possibilities of a mind which is deprived of both the seeing and the hearing paths to knowledge, wrote the author in a telling letter:

I, too, was handicapped in the earliest years of my life. I, too, had a potentially normal mind. Strong barriers had to be broken down before my mind could be awakened and developed. Only the skill of a wise, loving teacher made this possible. Only a patient study and clear understanding of my mental needs lifted me up to a happier, freer existence. . . . It is of the utmost importance to give every child the best education of which he is capable. No effort, no money, no sacrifice should be spared. The more severely a child is handicapped, the more precious is whatever equipment is given him for the struggle of

life. Let the public once realize how far such children can be helped, and nothing will be left undone to prevent the fearful waste of human minds which lies heavily upon our civilization. This is true conservation—the saving of valuable human faculties from neglect and unskilful teaching.

The other groups of subnormal children will not be separately taken up here, as they are discussed in connection with causes and conditions of exceptional development in later chapters. But it seems to be the place here to call the readers' attention to some of the symptoms which the educator must learn to observe, to secure timely recognition of *DANGER-SIGNALS* which would indicate that the normal development of a child is put at hazard.

Principles of Growth.—Human life is determined by principles of growth and development; growth as to size and weight, and development as to organization, differentiation, and function. There is the size and weight of the body as a whole; there is the evolution of the bony skeleton, of the muscles and viscera, of the central and peripheral nervous system, with the "sympathetic" branch which regulates the functions of the viscera. Upon the growth and development of the nervous system depends the development of the functions of intellect and will. Abnormalities of growth and development are distinct danger-signals. There may be *irregularities in the matter of growth periods*. Anatomical growth may not keep pace with mental growth. By Crampton the helpful distinction has been made between *chronological, anatomical, physiological, and psychological growth, or age*. Though he had years of life in mind, we may apply his distinction to the developmental periods upon which the author bases his analysis and argument. Mental pre-

cocity may be unsupported by healthy development of physiological function; or physiological function, *e. g.*, in the matter of sexual development, may be unaccompanied by the balancing power of mental maturity. Any such discrepancy will cause a tension fraught with danger.

Body measurements and tests of physiologic function, together with repeated tests of mental growth, are of the utmost importance in the study of the individual child.

Early Observations.—Some of the earliest observations can and must be made by the parents. A child ought to smile not later than at the age of three months, sit up at four to six months of age, stand up at one year, and begin to walk and talk a little later. Whooping-cough at a tender age frequently injures a child mentally, through mechanical lesion. Neurotic babies are subject to convulsions and thumb-sucking. The latter is also a sign of sexual danger in early infancy. Infectious diseases, like measles and scarlet fever, often leave their traces behind.

Functional Defects.—Defective teeth are invariably a danger-signal. They may prove the existence of various functional diseases, hereditary or acquired (including syphilitic infection—"Hutchinson's teeth"), which prevent proper formation and growth; or they point to malnutrition, poor digestion (with the formation of decayed matter affecting the teeth, in solid, liquid, or gaseous form), and other temporary causes. In every instance they interfere with the proper mastication and digestion of food, with the protection of the nasal-pharyngeal cavity, with proper growth of the bones of the jaws and of other parts of the skull, and with proper articulation.

Facts of respiration and heart action, of appetite and

digestion, of headaches and dizziness, enter into this group of observations. It has been found that the grip of the hand is a fair index of intellectual development, lower grades of mentality lacking the muscular control necessary to produce an effective grip. This proves, by the way, that even manual efficiency is a matter of mental control, even in seemingly simple activities.

Frequent urination is a danger-signal. It means either distinct disease or lack of volitional control—in other words, a psychic difficulty. Regular examinations of the child's urine should be made for the detection of diseases of the kidneys, diabetes insipidus, intestinal intoxication, etc. There might also be examination of the blood for anæmia, leukemia, parasites (malaria), inflammatory states, infection (syphilis), etc.; also occasional tests of the fæces for ability to digest various foods, intestinal parasites, etc.

The so-called "growing pains" of children are rather a suspicious element. They are often rheumatic in nature and require special attention. Rheumatism in childhood is dangerous for the reason of its insidious onset and never very acute manifestations.¹

Left-Handedness.—Left-handedness has often been considered a danger-signal. It indicates, of course, a deviation from typical conditions. Right-handedness is a very ancient characteristic of the human race, and even primitive peoples are generally right-handed. Left-handedness is therefore a variation not to be considered as a primitive trait. As a matter of fact, left-handed in-

¹ Doctor J. A. Colliver has found that one of the earliest manifestations of rheumatism on the nervous system is irritability, fretfulness, and the like. There seems to be a close relation between rheumatism and chorea.

dividuals are found among the very intelligent and skilful; left-handedness as such is therefore not a danger-signal, unless it is coupled with other symptoms. It has been shown that the usual right-handedness may have one cause in the arrangement of the blood supply from the heart which favors the right arm; left-handedness would, then, indicate a reversion of this arrangement.

Another cause of the right-handedness of the great majority of men, however, is the stronger development of the left hemisphere of the brain. When, therefore, left-handedness is associated with speech defects, as it often is, it would reinforce a diagnosis of defective central condition; for speech defects, unless caused by anatomical defects in the organs of speech, can be explained only by underdevelopment or lesion in the speech centres of the left hemisphere. Speech defects are a grave danger-signal.

Difficulties of the Nervous System.—Here we come to the extensive sphere of danger-signals in the development of the nervous system. This is at the same time the province of psychologic and mental disorders, including the fully developed psychoses. Yet it should never be forgotten that there is a constant interaction between bodily and psychic conditions, and that it is impossible to separate absolutely the psychical from the physical. Bodily symptoms will indicate psychic disorders, and psychic symptoms will point to disturbances of physiologic function.

Some of the danger-signals in this province are changes in temperament (crying and laughing readily) and unwarranted attacks of temper; rapid fatiguing and disinclination for effort; drowsiness, excitability, insomnia. There are the defects of memory and concentration; of

judgment; and in the sphere of will, lack of determination and decision. A mechanical memory alone is not a sign of intelligence, and is found remarkably developed even among imbeciles. Precocity is another sign, eventually of nervous strain and derangement.

Apparent disinclination to obey may, as has been shown, be due to imperfect hearing; it may also be evidence of psychic disease, like "negativism." Aversion to reading and writing may be caused by imperfect vision; or it may be the effect of an impairment of the speech centres in the brain (alexia and agraphia). Ugliness and irritability may be traced to astigmatism, which in turn produces eye-strain and persistent headaches. Yet these symptoms may also be due to disturbances of digestion (trophic disturbances) or to nervous disorders. Laziness is often a symptom of anæmia or of neurasthenia, of vasomotor disturbances; or it may be caused by malnutrition, overexertion at home, lack of sleep, or lack of ventilation in the child's sleeping chamber. Fretfulness may have its cause in a great number of various conditions, notably indigestion; it has its neuro-pathic aspect, also. We are tempted to feel very much vexed when a child makes grimaces, when he is inclined to giggle and babble, or to disturb the artificial discipline of the schoolroom by whispering. Yet these manifestations, when they are not perfectly natural expressions of a child's overflowing life intensity, as well as other symptoms, like sniffing, coughing, restlessness, and inattention, may be, and often are, symptoms of nervous disease. They may be enumerated among the so-called habit-tics or habit-spasms, like twitching, shrugging, shuffling, grinning, sighing, yawning, echolalia (the repetition of words spoken by another, as, *e. g.*, repeating a

question before answering it), uttering curious sounds, such as chirping, etc. Again, momentary inattention and absent-mindedness may be due to a mild form of petit mal (epilepsy). Sudden attacks of excitement, outbreaks of temper, destructiveness, hitting other children, and the like, suggest the presence of psychic epilepsy. There are manifold movements characteristic of chorea. Although true hysteria is a disease which does not develop before the adolescent age, there are quite a number of conditions in children which may be counted among hysterical symptoms. An emotional temperament is one of them; instability of will and irresponsibility are others. These symptoms are very often found in young girls who seem to be predisposed to develop true hysteria unless preventive measures are taken at the right time. It has been observed that an exaggerated imagination and selfishness, or rather self-centredness, go with these symptoms; and that deviations from the truth and fabrications of often astounding consistency are characteristic of this condition. Children's lies are a chapter in themselves. Books have been written on the child as a witness, showing how unreliable the statements of children are, even of those who are generally truthful. A tendency to lie, to tell stories, is symptomatic of certain developmental periods.

These statements show how necessary it is to observe children carefully. Practically all of those showing symptoms of the kind enumerated in the preceding paragraphs are potentially normal, but need the attention and care which will protect them from failure and destruction.

Retarded Brain Development.—In some children of the atypical class there is a pathologically retarded

growth rate which also affects brain development. These children show a retardation of mental development which has to be very minutely studied. The budding-time of every faculty, every manifestation of new growth, every twist the mind takes in groping for further touch with the world of knowledge, every indication of power to do, must be taken cognizance of and must be utilized. These children are like a tender, slow-growing plant which the gardener cherishes with particular care. They will usually repay all this attention by later strong growth. If they fail, they may approach the condition of arrested development, like those of Group B, Subdivision 2, in the author's classification, or they will sink even lower in the scale of intellectual measure. Among them we shall find a great many of the "repeaters" mentioned in the beginning of this book.

CHAPTER VII

EXCEPTIONALLY BRIGHT CHILDREN

We may distinguish four classes, or types, of exceptionally bright children, using this term as meaning children who are in advance of their fellows of the same age, especially in school work.

FOUR CLASSES OF EXCEPTIONALLY BRIGHT CHILDREN

The *first group* consists of *children endowed with a good memory*.

The *second group* comprises *those whose physical and mental growth is generally more rapid* than that of an ordinary child, without pathological precocity.

The *third group* consists of children of *one-sided development, i. e.*, having one faculty, or group of related faculties, developed out of proportion to the other faculties.

The *fourth group* is composed of those children in which *special or general excellency is associated with neuropathic and psychopathic tension*.

The first two groups belong to the class of *pseudo-atypical children*; the last two groups represent *atypical conditions*.

First Group: Children Endowed with Good Memory

Success in school, as already shown, is not altogether an index of real mental excellence and efficiency. The

first group of "bright" children does not necessarily represent brightness or brilliancy at all. It simply represents success, at least of a temporary kind.

Their "good memory" is largely of a mechanical kind. In school work, which consists mainly of recitations and the acquirement of book knowledge, they are apt to make rapid progress through the grades. They "learn" because they retain the lessons and can reproduce them, as a sponge returns the water it has absorbed. There are, indeed, good minds lucky enough to be also endowed with a good memory, and weak minds whose weakness is augmented by a short memory span. But it does not infrequently happen that very mediocre or even feeble minds, through having a good although mechanical memory, will outshine their betters in school work of the ordinary kind, before the higher reasoning faculties come very much into play. When that time comes they will be hopelessly left behind, much the worse for their "learning," which does not represent any live value to them; its acquisition has prevented them from preparing themselves for life in their own lowly fashion. In their case it is a matter of early diagnosis to direct them along really educative lines. Their memory endowment will assist them in developing *skill* in certain lines of activity, but will not make them socially efficient in the sense of higher competency.

The other three types involve intellectual faculties of an unusual character.

Second Group: Children of Accelerated Physical and Mental Growth

The pace of a child belonging to this group is faster, his process of maturing is hastened. He travels in an

automobile when the others ride on horseback or travel on foot. He covers distances with lightning speed.

There is the case of *Robert Wiener* (Case 17), whom his father, Professor Wiener, distinctly pronounces to be a perfectly normal boy. Robert Wiener graduated from Tufts College at the age of 13 years; at the age of 17 he took the degree of Ph.D. at Harvard, and then studied for two years at Cambridge University, England. He was appointed, at the age of 19, assistant professor of philosophy at Harvard College.

Winifred Sackville Stoner, Jr. (Case 18), lately of Pittsburg (now Wilmington, N. C.), seems to belong to this class. She is perhaps an exaggerated type and has had unusual opportunities—the exclusive attention of a bright and well-educated mother, a good and well-cared-for home in which everything was sacrificed to the child, a sturdy heredity.

From her chronological development a few data may be quoted:

At 6 months: Could talk and knew colors.

At 16 months: Could read.

At 2 years: Wrote own name on hotel-registers and began keeping a diary.

At 3 years: Amazed adults by her spelling. Acquired use of the typewriter as an aid to learning spelling and memorizing.

At 4 years: Learned the Latin declensions and conjugations as singing exercises, and received a diploma in Esperanto.

At 5 years: Wrote stories and jingles for newspapers, spoke eight languages, translated "Mother Goose" rhymes into Esperanto, learned to waltz, two-step, and three-step.

At 7 years: Learned the outlines of Greek, Roman, and Scandinavian mythology.



FIG. 3.—Winifred Sackville Stoner, Jr., in eurhythmic pose.

- At 9 years: Passed entrance-examinations to one of the largest Western universities.
- At 10 years: Was elected president of the Junior Peace League of America.
- At 11 years: Began specializing in music, art, and dancing, continuing her academic work and physical training.
- At 12 years: Ready for graduate work in any university in the country.

Her mother, Mrs. James Buchanan Stoner, wrote to the author under date of June 10, 1915, from the United States Marine Hospital at Wilmington, N. C., as follows:

Winifred is now in the adolescent period, and I am striving to guard her from undue excitement of either mental or physical nature. As you know, I am a firm believer in filling the child's mind full of good material for educational foundations during the memory period from 2 years to 12, and now that the reasoning period has begun she has something about which to reason.

Winifred has no set lessons, but from early training she has become such a lover of good literature that she would be most unhappy if deprived for a single day of converse with her book companions. She reads at least for an hour each day. At present she is reading everything she can find about Japan, as she plans to write a play on this subject. For two hours she helps me as my secretary, answering letters, and working on "The Natural Educational Manual" and "Natural Educational Game Book," two books to be ready in fall. Winifred and I will be joint authors of these books, and another book belonging solely to the kiddie, and which she calls "Facts in Jingles," will be published by Bobbs-Merrill in a few weeks. Winifred has corrected proof of this book since returning from New York.

She practises for perhaps an hour each day on both her violin and piano, and amuses herself playing for little colored children who live in cabins facing our reservation, playing for them on the mandolin, jew's-harp, or orchestra bells.

One or two afternoons of each week she goes to the beach to swim, and on Wednesday evening she is allowed to attend a little dancing club until 9.30 P. M.

Nearly every pleasant Saturday afternoon she goes with several friends of her age canoeing or botanizing. As you know, North Carolina is the home of some very interesting plants, among them the Venus fly-trap, bladderwort, pitcher-plant, and other carnivorous members of the plant family. Winifred is intensely interested in these plants and has sent specimens to a number of our friends in northern cities.

Each morning she plays at least one game of tennis before breakfast, and after dinner in the evening she and I play croquet or take long walks through the white sandy tracts around our home.

At least fifteen minutes is spent in the kitchen each day gaining knowledge of culinary matters, and yesterday Winifred made a skirt for herself.

On one of our up-stairs porches I have a regular gymnasium, and here every afternoon, when we are at home, we exercise for at least one-half hour before taking a shower-bath and rub-down.

The little girl has learned how to drive an automobile and occasionally I let her drive when we take motor-trips. She drives also her horse Coupon, and occasionally rides horseback.

Some of her time is taken in training a menagerie of pets. We are trying our N. E. theory on all sorts of young things, and you will laugh at the mixture. In her pet house, which is a large screened tent, formerly used as a mess-room by some of our officers, Winifred has three baby rabbits, four kittens, two pigeons, two baby chickens, a baby catbird, a pup, and an alligator. I have always contended that any animals could be made to care for each other if they were raised together, and it is a wonderful sight to see the cats kiss the catbird and not hurt it. I am going to try to get a photo of the rabbits sleeping in their nest, the bird sitting on a small tree by the side of the kittens, and the chickens pecking peacefully at their plate of corn. A number of people are watching the outcome of Winifred's experiment with much interest and they predict that the kittens will eat the birds and chickens and rabbits.

Winifred has a canary which she has tamed and taught to do many wonderful tricks, and while she writes her stories on the typewriter he sits on the carriage of the machine and sings to her. To-morrow she is to receive a monkey and poll-parrot from a sea-captain, and then you will believe that there will be

no time for study of books, as the pets will take up every spare moment.

I am writing to you of these trivial matters so as to paint a picture of the simple, happy, full life Winifred leads at this chrysalis time of life, when no child must be forced to study or to play.

The picture showing her in a eurhythmic pose with co-ordination of mind and muscle is perhaps the best. . . .

She is five feet and three inches tall, weighing 130 pounds.¹ Although she does not look overfat and her flesh is very firm and solid, I am using tennis before breakfast to train off a few pounds, as I do not want her to be a heavy-weight champion.

Up to the present time she has never been beaten by any boy of her age in any athletic match.² She is certainly a perfect specimen of physical health and strength, and Doctor O'Shea says that she knows more and can do more than the average college graduate.

I am proud of her strong body and cheerful disposition, but most of all I rejoice in her lack of conceit. She does not think that she knows anything, and she always objects to showing off. She cares nothing for public applause, and during our last visit to New York she consented very unwillingly to help me on the stage.

She is now to keep away from public life as much as possible for the next six years and see if she can grow up with the same unaffected manner and lack of conceit which has characterized her childhood days.

It is certainly gratifying that Winifred has not paid the penalty of conceit for the great publicity which has been given her education and accomplishments. From the interesting statements of her mother it appears that the child had, at the time of this writing, not reached puberty, so that in the matter of the development of the most vital feminine function she is not as advanced

¹ These measurements are excessive. Tall girls of 14 or 15 reach that height, which is the mean for girls of 19 and 20. The weight exceeds that of the tallest girls of twenty by about five pounds.—M. P. E. G.

² No boy of her age can equal her in size and weight.—M. P. E. G.

as she is in mental performances. But her physical growth, otherwise, is most pronouncedly in excess of girls of her age, so that her nervous system is supported by bodily resources. It is further important to note that Mrs. Stoner recognizes the period in her child's life completed so far as the "memory period," the "reasoning period" just having begun. As a matter of fact, what I have seen of the child's literary productions is characterized by a good use of memory, with strong power of imitation and imagination, rather than mature and independent reasoning. How she can, under the circumstances, compete with a really mature college graduate would not seem quite clear. She is certainly "book-minded" to a degree, with some disregard for manual and practical training. Maybe she is predisposed for this literary quality by hereditary and environmental influences no more than by the gift of an exceptionally good visual and aural memory, such as will be described later in the discussion of other types of exceptionally bright children.

Mrs. Stoner has rendered a distinct service to education by giving us an insight into the details of her methods with her exceptionally gifted child, and the author of this book has no desire here to enter into any detailed review or criticism. She calls her procedure, which she does not call a distinct system (being rather the application of good educational principles to a special case), the "natural education." It is very doubtful, however, whether it is safe to generalize from her experience with the one child—an only child at that, surrounded by certainly unusual life conditions. Winifred's life is by no means as "simple" as Mrs. Stoner thinks, if we compare the girl's opportunities with those of other girls. One

thing ought to be mentioned: the entire omission of the father's influence and co-operation, so that Winifred's educational atmosphere appears as most definitely feminine.¹ The author fears that Winifred's education has not been "natural" in the sense of opportunities and conditions which are "natural" with all children, even all gifted children. She has enjoyed many things which were exceptional, and missed others which are "natural" to most children. If, by the way, she would be "most unhappy" if deprived of her book companions for a single day, she is apt to be ill-prepared for reverses which would change her opportunities.

Two other cases of exceptionally bright children of this class which have come under the author's personal observation may here be cited for further illustration.

One is that of *W. S.* (**Case 19**), a boy of 5½ years, of wealthy, intelligent parents. This is the statement recorded after a brief test at the Educational Clinic of the National Association for the Study and Education of Exceptional Children in Plainfield:

PARENTS' REPORT

The boy is reported by the parents as being generally precocious, with a good command of language, reading almost any kind of book, and having a fair skill in writing. At one time he committed to memory forty-two consecutive pages of Kipling's "Jungle Book," remembering the place of each sentence on the page it was printed. It is also stated that he has an excellent number concept, having worked out the multiplication tables up to twelve by himself. He is reported to be less apt in manual

¹ Mrs. Stoner, to whom these statements were shown, protests that "Daddy Stoner has taught Winifred many things. Through him she gained her knowledge of physiology, swimming, horseback-riding, and many other important matters. She is not a distinctly female-educated child."

work. He has had little contact with other children and finds adjustment with them difficult, although he is always willing and pleasant.

Physical Observation.—W. is generally healthy, although he is somewhat nervous and has a slight difficulty in the control of larger limb movements, as well as of minute muscular co-ordinations. Sense-perceptions are found to be normal.

Clinical Tests.—The Binet Tests which were applied for the sake of comparison would place him at a "mental age" of about twice his chronological age. This result, however, does not correctly state his case. Other tests showed that he possesses a most remarkable visual memory, which will in part explain his splendid success in reading and number. He visualizes readily and remembers every detail. He performed the series of five Knox Cube Tests correctly and immediately; completed 24 of the 56 Completion Test sentences, and would have completed more had he not become tired and restless. He solved the geometrical Anchor Puzzle in a rational manner, after having been shown the initial steps. In contrast to this, he was disappointing in handling the Healy Form Boards Nos. 3 and 5. He completed No. 3, but in doing so disregarded the picture element entirely, mechanically fitting the insets into the grooves, making a number of irrational mistakes before succeeding. This showed that he was working exclusively from the form concept. In No. 5 (Picture Completion Test), which requires a judgment of situations, he failed.

His response was prompt and eager; his attention and endurance, however, were variable.

Conclusions.—Scholastically, he may be placed in the Elementary Period, and would possibly be able to do ordinary work in lower grammar-classes. He lacks, however, the maturity of mind which would enable him to do such work rationally and profitably. His precocity is marked (non-pathological); it is apparently of a linguistic and formal type, characterized by powerful visualization and extraordinary memory.

It will be well for him to go slowly in school work, as this would hardly help him in mental development. He should have mainly an outdoor life with practical experiences of all kinds, and contact with other children. His motor side needs stimulation to offset his linguistic and sensory tendencies. He should

have a chance of "roughing it," running up against obstacles, and discovering his limitations. He should have a minimum of protection and a maximum of personal experience.

It is quite possible that he will develop into a man of power and leadership.

The second case is that of *P. E. G.* (Case 20), a little boy of 2 years, 11 months, the child of intelligent and slightly neurotic parents, whose history the author has quite complete. His development is generally accelerated, bodily and mentally, without one-sidedness or pathologic precocity as far as present observations go. His first and second year's development is given more in detail in the appendix (p. 707).

At 26 months he was very fond of playing in the gymnasium, rolling dumb-bells, playing football, climbing vertical ladder, etc. He put his playthings in order, picking up cards, blocks, etc. Liked to arrange things in rows. Half a month later he sang, repeating notes and combinations so as to produce a simple melodious rhythm, making up his own text about Jack Frost coming, biting baby, etc. He now spoke in sentences, making sequences of sentences, combining them in compound, and at times even in complex, structures.

At 28 months he operated shutting off buzzer at telephone switchboard. Very fond of any kind of machinery, which he likes to investigate. Added to his gymnastic performances: swinging on rings (with hands supported by father); balancing himself with hands on table and feet propped up on back of chair, several feet away; jumping with both feet on and off his small overturned rocking-chair, etc. Said: "Baby go with papa down-town; both go down-town."

At 2 years and 7 months he talked and reasoned amazingly, even in repartee.

At 2 years and 9 months he attended a big three-ring circus. Deeply interested in performances and in the animals of the menagerie, particularly the elephants. Since then played circus and menagerie, feeding elephants, etc., in many ways, like a much older child.

Half a month later these are some of the expressions recorded: "Oh, thank lou, dear God, for the sunshine!" "Doctor thinks William is feeding my chickens. But he does not. I want the food for my chickens. I will feed them myself." "I am taking water to my chickens." To the cook: "See, God listened to me and sent the sunshine."

With 2 years and 10 months he began to build structures with wood and odd material in the garden; played with his many engines, cars, autos (toys), pieces of board—arranging them in lines, squares, and open spaces, as barns and houses, with doors, etc.; sometimes laying pieces across on top, for roofs. Out of window-sash, old uprights, broken windows, branches of trees, etc., he built a "stable" outdoors, near a tumbled-down barn, directing his nurse to do the things which he was not big enough to do.

At the time of this writing, when he is 2 years and 11 months old, he knows his full name, has a very full vocabulary, to which he adds daily, uses the comparative frequently, understands weather conditions, is full of poetic imaginations and make-believe play, always constructively active. His height is $39\frac{3}{4}$ inches, his weight $37\frac{1}{2}$ pounds. Physically he resembles a 5-year-old boy, wearing even 6-year size of clothes. He is generally robust and healthy, and when troubled with indigestion or otherwise, shows a wonderful recuperative quality. The Binet Tests would place him at a "mental age" of about $5\frac{1}{2}$. But he is really much further advanced in general intelligence (excluding school branches, like reading and writing) and in constructive judgment and reasoning power. He has a quick grasp of situations and always finds his place. He remembers everything, and is a constant amazement to his parents and friends through his ability to reason out things of which he cannot have a direct experience. He has absolute balance. Accomplishes the first and second move of the Knox Cube Test; uses the peg-board for construction of "houses"; follows more than three simultaneous directions; can tell little stories from pictures; understands categories; arranges eight tubes according to length; matches his playthings and other things perfectly, noticing the slightest difference; does the Seguin Form Board Test rationally, and in a short time; imitates building a bridge, etc.



FIG. 4.—P. E. G. making
believe he is taking
a photograph.



FIG. 5.—P. E. G. in his "barn."

In no one thing can this little boy be said to be specially gifted, at present, unless it were in the matter of construction and distinct leadership and organizing qualities. But he is generally advanced, far beyond his actual age, and promises to become a man of power at an early period of his life. Both his mother and his father were precocious in youth.

As long as the physical health and strength of children of this type keep pace with their mental advancement, there is nothing to fear. But they certainly need to be given the opportunity to live and learn according to their quickened rate. They must not be held back to chafe under the restraint of their vitality and initiative, and must be given tasks commensurate to their strength and ability to cover ground. They need, however, careful observation and skilful handling. The brilliancy of not a few of them will "peter out" unexpectedly at a later age unless there is a foundation of strong mental and physical vitality and resource.

The warning must be given that at the first sign of tension between bodily and mental development, or in the emotional sphere, such as is likely to appear at the adolescent stage, a new adjustment becomes imperative.

For even these non-pathological children may at times, especially at certain growth periods, *e. g.*, during the fatigue period around the eighth year, or at the time of puberty, develop a degree of disparity between bone, nerve, and muscle growth, between stages of central and peripheral changes, between the size and function of certain organs, that danger of derailment is imminent. It is therefore commendable to watch the physical health of these children at all stages with particular care, and to make promotion, even continuance in school, dependent upon a clean health record.

Much depends upon the kind of stock from which such a child has sprung; a *virile heredity* is a good promise of wholesome advance. Environmental conditions play their part, favorably or the reverse.

The last two groups of exceptionally bright children are those who suffer the most from lack of adjustment in the ordinary educational system, in home, and in school.

Third Group: Children of One-Sided Development

This is the type of child in whom one faculty, or group of related faculties, is developing at the cost of all or most of the other faculties, or related groups of faculties. These children will be bright and progressive in certain directions, and dull and ineffective in others. Distinct types can be differentiated: the *motor type*, which is largely constructive along motor lines; the *sensory type*, in which sense-perceptions are particularly keen, and impressions dominate over expression; the *artistic type* (musical, poetic, graphic, creative); the *mathematical type*, which is distinctly abstract; the *scientific type*, in which abstract and constructively practical elements blend; the *linguistic type*, which is either scientific, *i. e.*, philological, or practical, *i. e.*, characterized by facility in acquiring language and languages. Naturally, there are combinations. The sculptor and the architect are artists, but they belong to the motoric type of artists. The architect depends upon good mathematical endowments and must possess sufficient scientific instincts to battle with the properties of the material he uses and the problems of structural security. It is interesting to note that individuals of so-called "universal" genius, like

Michael Angelo (Case 21), have combined just such elements, being especially proficient in each and all of them. Then we may have an individual of linguistic type endowed with poetic genius, so that he becomes a master of words, and capable of rendering masterpieces of foreign origin in his own language, re-creating them, as it were, instead of merely translating. Among the Germans *Rückert* (Case 22) was one of these; among Americans *Longfellow* (Case 23); among the Irish *Mangan* (Case 24), etc.

Some of the apparently unusual special equipment is deceptive and transitory. We have frequent examples of seemingly well-gifted high school and college students who excel in one or another thing, becoming class leaders, editors of fraternity papers, etc., and who fail dismally in after-life to make good in the very things they seemed to excel in during their college days. Such things are often a matter of temporary opportunity and ephemeral fitness.

Also children of ordinary endowments differ in *type*, as has been shown in previous chapters, without exhibiting unusual gifts in any particular direction. Even these are in danger of becoming mentally and morally warped if forced to conform to "general" treatment and "average" school aims. This danger is incomparably greater in the case of unusually gifted children of the class we are discussing now. If they lose their balance and get out of touch with normal life conditions, their special talents may be the instruments with which they commit antisocial acts. Here we approach the problem of juvenile delinquency, which will be treated in another chapter more fully.

The children of this group need a *training* which takes

the lead from their specialty and makes all other mental activities focus in it, giving them motive power along socially constructive courses. Under the guidance of wise parents and teachers such children will become splendid social assets, their specialized efficiency giving to the world helpful culture increments of unusual amount and concentrated potency. Their special gift furnishes the point of vantage from which they will enter the entire field of learning, thus counterbalancing an unhealthy one-sided development as far as possible. But unless the child's main interest is taken as the starting-point, he may become hopelessly averse to study and all-around culture, degenerating into a drifter or a narrow-minded egotist, devoid of socially constructive energy.

Here is the case of *W. B.* (**Case 25**), a boy of 16:

A mechanical genius; has constructed several workable motor-boats; erected a telegraph-line between his playhouse and his home. Also erected a wireless station on his home grounds. He has recently raised his wireless antennæ 75 feet above the ground. Goes about with his pockets full of tools. Interested in machines of all kinds, not to use them, however, but to study their mechanism; it is not the moving pictures but the picture-machine which interests him. He received a typewriter to learn on, but broke it up to study the machinery. Takes bicycles, watches, etc., apart continually. Not much interested in the usual boys' games; never very enthusiastic over anything; calm and self-possessed; physically normal and healthy, but a sexual pervert. Has been a failure all along in grammar-school. No tutoring at home could get him into high school. As parents refused to try special training away from home, his case could only be studied, not relieved.

Very differently did another case develop:

H. H. (**Case 26**), a boy of 13. A decidedly inquisitive and experimental type. Built fires in the cellar of his home, not from

viciousness but because he wanted to see what would happen. Played innumerable pranks on his schoolmates and teachers, who did not understand him, so that he was constantly in mischief and upset all discipline. After he had entered Herbart Hall¹ his inquisitive tendency was made use of through experimental studies of all kinds, in the science laboratory, in the workshop, in road and building construction, and in many other ways. He was given opportunity to apply his great energy in numerous outdoor games and sports, playing Indian, building wigwams, camp-fires, etc. His book-studies were carefully co-ordinated with this life activity. He stayed only a few months, and left altogether rearticulated, mentally and emotionally. Since then he has been standing at the head of his classes in select private schools.

The case of the little 5½-year-old boy, *W. S.* (Case 19), mentioned in the previous group, may be referred to here, if we should be inclined to consider his linguistic and mathematical tendencies sufficiently pronounced to outweigh his other possibilities; this, however, would perhaps be a premature conclusion. Reference may be made to the historical personality of *Ulysses S. Grant* (Case 27). When he retired from the army after the Mexican War he failed in every business pursuit in which he engaged. He was distinctly of a non-practical type from the point of view of commercial efficiency. But he found his place again as a leader of men when his time came.

¹ At that time used as a laboratory school of the "National Association for the Study and Education of Exceptional Children," at "Watchung Crest," Plainfield, N. J.

*Fourth Group: Children of Neuropathic and Psychopathic Tension.*¹

Here we have the genius and the crank; the great leader of men, the prince of commerce, the poet, and the philosopher; the musical prodigy and the artist of high degree, with his Bohemian contempt for conventionalities. The distinction between representatives of this group and the previous group is not always easy to make, and depends largely upon the psychic aspect of the case—upon the equipoise of the nervous system and the stability of the mental stamina. Sometimes it is merely a matter of degree, or grade. An individual of one-sided development may easily slip into the truly pathological class at any given moment of tension.

In some individuals of this fourth group *sentiment* is apt to overpower the reasoning faculties, and hysterical

¹ It may be well to insert here the definitions of various terms as used by the medical profession:

Neurasthenia: exhaustion of nerve force. *Neuropathic*: pertaining to nervous diseases. *Neurosis*: a nervous affection without lesion. *Neurotic*: nervous; pertaining to neuroses; pertaining to the nerves or the nervous system. *Neurology*: science of nervous structure and function. *Neuropsychosis*: a combined nervous and mental disease. *Psychiatry*: the treatment of mind diseases. *Psychosis*: any disease of the mind. *Psychotherapy*: treatment of disease by mental influence. *Psychopathology*: the pathology of mental diseases. *Psychoneurosis*: a functional mental disease. *Psychopathy*: any disease of the mind (*cf.* psychosis). *Psychasthenia*: mental fatigue (sometimes used in the sense of mental weakness=feeble-mindedness).

It will be seen that the terms are not very clearly differentiated in every way; later writers employ them in individual ways. Some insist that every psychopathic condition is a neuropathic condition, and *vice versa*. But neurologic terms are mostly used to denote physiologic function; psychological terms, to denote mental function. These two functions are, however, so minutely interrelated that substitution of terms cannot always be avoided.

conditions are frequent. Or there is cleverness of extreme acumen untempered by qualities of the heart. There is always some *psychic defect* present which endangers the mental equilibrium. In this sense *genius is akin to insanity*. The *greatest criminals* of history belong to this class, whether they were international crooks, or sitting on thrones, or in the counting-houses. In them the moral tone is unhealthy, self-control is weakened, the ego is exaggerated and morbidly sensitive. In certain individuals of this class overefficiency in one direction is offset by complete underdevelopment in all others; here we have the *idiots-savants*.

Individuals of the idiot-savant type exhibit the most prodigious ability in a certain well-circumscribed field while all others lie fallow. *Musical prodigies*, *lightning calculators*, and *memory prodigies* of this type may be clearly idiotic and feeble-minded, and their special gift appears as the result of a mechanical process in the brain which has no significance for the intellectual value of the individual. The very facility of a man like *Inaudi* (Case 28) to give immediate answers to extremely complex mathematical problems with large rows of figures eliminates conscious thought and judgment entirely, and places him in the class of freaks of nature. In a large institution for the feeble-minded the author saw a young man, distinctly idiotic, who was able to tell you instantly, when told the date of your birthday, on what day of the week it would fall that year, or on what weekday you were born (Case 29). Such persons are mere living calculating-machines. The study of their cases has this significance that it will throw light upon certain mechanical and subconscious processes in the central nervous system which are involved in mental operations.

According to Tredgold, there is a man in the Earlswood Asylum, England, who entered at the age of 15 and is now over 70. He did not walk until 7 years old, was never tolerated in school and learned to write and spell only a few simple words. His memory was good and he showed an early aptitude for drawing. He was very deaf. After sixty years' work, this man has over fifty excellent crayons to his credit, wonderful carvings in wood and ivory, and a 10-foot model of a full-rigged man-of-war of the old wooden type, built to the minutest detail. He has also constructed a huge and awe-inspiring mechanical doll, 13 feet high. By a wonderful internal machinery this figure will turn its head, raise its arms, open and shut its eyes and mouth, protrude the tongue, etc. Yet this man is feeble-minded, superlatively egotistic, glories in self-praise, and is stubborn and emotionally unstable. He is a genius, yet cannot take care of himself in the outside world except under supervision. He is considered an idiot-savant. But what might have been his possibilities if properly diagnosed in childhood? (Case 30.)

Wunderkinder. Another class in this group, the one to which the German term "Wunderkinder" has been applied, develops marvellous excellency without completely destroying the balance of the mind. *Genius* represents the most brilliant type of this order, and is a "Wunderkind" grown up.

Doctor Paul Carus says this about the genius:¹

The soul of a genius consists of motor ideas which are correct representations of things in the objective world and of the work to be performed. They interact without the laborious effort of conscious concentration. They act with machine-like accuracy,

¹ "Our Children," p. 154.

so as to allow attention to be concentrated upon the main purpose of the work and not upon its details. A genius originates partly by inheriting a disposition for easily acquiring certain functions, or generally by possessing the knack of viewing the world correctly. Whatever may be the cause of genius, it certainly shows itself in the playful ease with which work of great importance is performed. . . . Genius is instinct on a higher plane.

This would show a relationship between the genius and the idiot-savant, inasmuch as there is the mechanical element in the make-up of both. *There is more of instinctive impulse than of conscious application.* But the difference consists in the use for higher purposes of activity which the genius consciously makes of his instinctive endowments. It should be noted that Carus recognizes the part which *motor ideas* play in the constitution of the genius, a fact to which reference will be made later.

An Early Reader.—What this mechanical element is may become clearer from a report published in the *Zeitschrift für Kinderforschung* (Langensalza, March, 1910), on one *Otto Pöhler* (Case 31), the early reader of Braunschweig.

He began to read letters, words, and figures at the tender age of $1\frac{1}{4}$ years.¹ The case of this boy, who was at the time of the writing of the article nearly 17, has been carefully studied, and cranial measurements have been taken. It appeared that when he was a child his occipital bone was unusually prominent, and the axes of the eyes were farther apart than in average children. Doctor Oswald Berkhan comments as follows: "Professor Hermann Munk has shown that the convolutions of the hindbrain have a close connection with the visual function, and that in this region (he calls it the visual spheres = 'Sehspähren') those

¹ Cf. the accomplishments in this field of Winifred Sackville Stoner, Jr., p. 108.

perceptions which were obtained from the optic nerves are stored up as memory images. It is therefore not improbable that the prominent occipital bone corresponds with a stronger and more deeply convoluted hindbrain, the centre of the optic images of written and printed symbols, *i. e.*, of the memory images of the words read. And the relatively greater distance of the eye-axes permits of the assumption that there is an extraordinary arrangement of the convolutions of the forebrain."

This indicates that the source of the boy's exceptional ability to read, and later on to acquire foreign languages, history, etc., was an exceptional *visual perception and memory*, based upon a special anatomical endowment.

It is well to bear this observation in mind in judging of those children who may be more directly contrasted with these facile readers, namely those who have particular *difficulty in reading, writing*, etc., without suffering outspokenly from alexia and agraphia, and without showing other mental defects. They will be referred to in later chapters. It is quite possible that in them the opposite anatomical and physiological arrangement exists. In the author's clinical observations he has invariably found that *children whose progress in these school studies was slow and unsatisfactory, had poor powers of visualization, and impaired visual and aural memory, even when their power of judgment and rational thought appeared unaffected.*

An exceptional and quickly acting memory power will explain many otherwise strange phenomena in the manifestations of these "Wunderkinder," and this memory is intimately related with corresponding motor impulses. It is essentially *a matter of motor ideas*, as Carus puts it.

The facts here stated may also throw light upon the conditions of the non-pathological classes of exceptionally bright children, and explain their special gifts.

The early faculty of Otto Pöhler to *read* figures was

not accompanied by a corresponding ability to compute, showing it to be in the nature of a visual mechanism. The boy was at the time of the writing of the article an intelligent young man, endowed with an admirable memory, well educated, pleasant of manner, who is always ready to find his proper place. Otherwise there is nothing remarkable about him, although he promised to be a very successful student of history. The anatomical peculiarities spoken of before are *less marked in the youth than they were in the child*.

The interesting *pathological symptoms* reported in this case at the time his precocious reading faculty was most marked, in his childhood years, were a tendency to stutter and to have spastic movements of the muscles of the mouth. A good constitution and careful observation saved the boy apparently from nervous dangers.

The Artistic Type.—Very different is the character-picture of another type of "Wunderkinder," the artistic type. Take the musical genius, *Wolfgang Amadeus Mozart* (Case 32) for an example. Mozart showed remarkable musical ability at 3 years of age. But he was never a well-balanced personality. He was impulsive, careless, erratic, a very poor manager. His irresponsibility in money matters, his happy-go-lucky way, caused him always to be in want. Toward the time of his early decline, when he had exhausted his opportunities and nerve-force in a spendthrift sort of way, he became morbid, and died at the early age of 35.

His was clearly a pathological case. Not all exceptional minds end so ingloriously and early. Professor Francis Galton says: "Early manifestations of genius are not incompatible with prolonged and even late development. *Haydn* (Case 33), *Beethoven* (Case 34), *Michael Angelo* (Case 21), *Milton* (Case 35), *Goethe* (Case 36),

Voltaire (Case 37), *Newton* (Case 38), and others are examples of lengthy process of development. Men of great original power may be expected to illustrate the most prolonged movement of mental growth." Nevertheless the danger of pathological tension is ever present, and too much care cannot be exercised in watching over these developments. When there is a virile physical basis for exceptional excellence, we may count such geniuses among the non-pathological classes. But it may be found on closer analysis that all of the men mentioned by Galton had their weak spot, their danger zone.

The Mathematical Prodigy.—The mathematical prodigy is another type. *Gauss* (Case 39) and *Newton* (Case 38) belonged to this type. With the mathematical ability is often coupled a high degree of effectiveness in the exact sciences, as astronomy, logic, etc.

The modern "Wunderkind" of this class is *William James Sidis* (Case 40), who as an 11-year-old boy addressed Harvard professors on the problem of the fourth dimension. In some respects he reminds one of Otto Pöhler. He, too, was an early reader, had a great interest in words and figures, and had mastered five foreign languages at the age of 8. He had studied anatomy and astronomy. But his main capacity seemed to be mathematical.

In a public discussion of the Sidis case¹ Doctor Philip S. Goodhart, of New York, a friend of the Sidis family, who had assisted at the boy's birth, said:

There seems to be a general misunderstanding, both in the lay mind and in the scientific world, of the conditions of life, the manner of education, and the general make-up of this remark-

¹ Cf. "Proceedings, National Association for the Study and Education of Exceptional Children," 1910, p. 112.

able boy. His father, Doctor Boris Sidis, is a personal friend of mine, and I brought the son into the world. Doctor Sidis and myself have been closely associated and have done literary work conjointly. The elder Sidis is a highly intelligent man of rare intellectual acumen, and is highly cultured. He has always been a close student of normal and abnormal psychology, and much of his work has shown profoundness, and has always been stamped by originality.

The mother of young Sidis is a graduate physician and also a talented woman. Both parents are of Russian-Jewish extraction.

The Sidis boy was, both mentally and physically, normal and in every sense an average child during his infancy and very early child life. Doctor Sidis began with his son in early childhood a system of instruction along original lines which, while not destroying the childlike tendencies, awakened and developed in the child powers of observation, analysis, discernment, and general intellectual activity, which he applied in the diversions and ordinary pastimes of the child's life. The child was thus, without an effort, utilizing receptive and perceptive, as well as conceptive mental processes which were along lines tending to develop a potent brain force. In the results achieved by the Sidis boy, doubtless both the elements of heredity and those of environment played an active rôle, and these forces were most happily combined to bring about excellent results. The boy is not physically a weakling, and while it is true he may be at times nervous and perhaps moody, up to within a few years past, when the boy ceased to be under my observation, he was enjoying the best of health. It must be admitted, however, that the child has been characterized by a certain awkwardness in manual activity and motor expression. In his childhood he passed through several severe attacks of illness, but showed excellent recuperative power.

In the same discussion the author commented on Doctor Goodhart's remarks in the following manner:

I was much interested in what Doctor Goodhart said in regard to the Sidis boy. While, of course, a more detailed study

of the child's physiological and psychological characteristics would make matters clearer, the statements of a man like Doctor Goodhart, who has known the boy and his family intimately, are significant. He states that there is a certain lack of nervous balance and control in the boy, and that he is awkward in manual activity and motor expression. This means that the areas in his brain which control motor activity are underdeveloped, and that his nervous system has not its normal strength. These very conditions establish danger-signals, and give the basis for an undue strain which may come sooner or later.

It has been impossible for the author to confirm or dispel his apprehensions, as all attempts to secure from the boy's father a statement of facts of his further development have resulted in failure. At the present writing the boy must be about 19 or 20 years old, and it is to be regretted that his development is not open for scientific discussion, after his case had formerly been given such wide publication.

It may be emphasized right here that all the excellencies of intellectual work done by William James Sidis have been in the sphere of abstract thought.

Other Cases.—Here are a few interesting cases from the author's own practice:

W. B., a boy of 9, highly nervous and with a system full of malaria. His principal asset and excellency was a most marvelous imagination. He was very mischievous and irresponsible. Once, playing Wild West, he became so realistic that one of his comrades escaped an actual hanging only by the interference of a passer-by. Most erratic in school and home, he, who had been almost given up in despair by his parents and his physician (by the way, one of the foremost specialists, who had recommended a trial at Herbart Hall), had a year's training at our laboratory school, where his diet, regimen, schooling, occupation, play, etc., were carefully arranged. He blossomed out into an amazing case of progress, constructive imagination, and



FIG. 6.—Sketch from life by A. S.



FIG. 7. Sketch from life by H. H.

self-direction. He went back to his home and to ordinary schools, saved from physical and mental disintegration, making good in every way, as one of the brightest boys among his fellows. (Case 41.)

Two other cases did not develop so favorably, largely owing to the fact that they were not given sufficient time for re-education and balancing. Both children had most remarkable artistic ability and might have developed into painters of exceptional talent if the parents had consented to giving them the opportunity of efficient teaching. One of the two, a boy (*A. S.*, Case 42), is now, 11 years after his removal from Herbart Hall, at the age of about 27, a shiftless vagrant, without intelligent self-direction or stability of occupation, a burden to his parents and to the community. Two of his original art productions (both done at the age of 14) are here shown. One is a free-hand drawing of one of his teachers, quite realistic and full of characteristic pose; the other a water-color sketch of remarkable composition and atmosphere. He had made rapid strides forward when his re-education was interrupted.

The other child was a girl (*H. H.*, Case 43) whose talent for the graphic arts was equalled by one for music and dancing, as well as appreciation of poetic beauty. She came to Herbart Hall, an adolescent girl with a number of psychopathic tendencies, among them a suicidal mania. Two of her art pieces are here reproduced. She would have needed years of re-educational effort, but was not given an opportunity. Now she is an inmate of a hospital for the insane. Yet she had been responsive to the mental hygiene at Herbart Hall, and would have had a good chance of recovery. Her case, as well as that of the boy, *A. S.*, showed symptoms of

predementia precox. The girl's case was aggravated by sexual morbidity (eroticism).

General Discussion.—Considering the general problem of the exceptionally bright child, we may again first consider *normal possibilities*. The case of the Sidis boy which helped to illustrate the fourth group of exceptionally bright children, may serve as a starting-point.

Doctor Sidis claims that his boy's remarkable manifestations are the result of an educational system of his own. He availed himself of the opportunity of every newly awakened interest, and states that much more intense work could be done by every child if a more rational use were made of what has been called "second breath," or "second wind," and by Professor William James, "reserve mental energy."

The Proper Method at the Right Time.—The contention is justifiable in a measure. Each child has budding or "nascent" periods for the different forms of mental work. The early years are the ones in which the *naming*, the *language-making*, the *counting*, the *computing instincts* arise, and in which a wealth of more or less conscious observations and experiments are made and stored up in the form of mental images and dormant impulses. These facts, however well known to some, are yet too little understood and hardly recognized in practice. It is perfectly possible to assume that we might succeed in developing a very large number of our children to undreamed-of mental alertness and efficiency, if proper use were made of these budding interests before they evaporate; and if a careful training of the attention were attempted alongside of proper methods of teaching the child individually at the right time. It is really in many ways a matter of the proper method at the



FIG. 8. —Water-color sketch (illustrating story) by A. S. The reproduction does not do justice to the fine color effects.



FIG. 9. —Outdoor sketch by H. H.

right time. Carus is right in saying (*loco cit.*): "The impressions of children who, in a certain line of activity, see nothing but the right methods from their very babyhood, will be so organized that from their unconscious depths up to the conscious surface of their soul, they will be predetermined to hit naturally the right mode of action. . . . The condition of genius is a ready and automatic interaction of a sufficient number of clear and correct thought images, or representative pictures, which must be brought under the control of a guiding purpose."

Suggestion.—Professor David Edgar Rice, of Columbia University, thinks that the achievements of the Sidis child are due to suggestion. "There seems to be scarcely any limit to the power of suggestion, and it is conceivable that by some process the father has been able to stimulate the natural powers of the child's mind to an extraordinary degree." This is very possible, indeed, and it may be urged that a well-balanced suggestive method has a place in education in all cases, not only when there is need of checking perverse or morbid dispositions. Suggestion has a very positive value.

Second Breath.—Further, the theory that we can do much more intense and sustained work by calling upon our physical as well as mental "second breath" is thoroughly tenable. As a rule we allow premature fatigue to interfere with the activity of our children, a fatigue which is not seldom the direct result of tedious and unscientific methods of teaching and of unhygienic conditions. We do not work the children intensely enough. The most efficient man in the world is he who overcomes the torpidity and sluggishness of ready fatigue. Drawing upon our hidden strength, we develop latent possibilities and bring into activity those brain cells and

thought and motor centres which lie dormant and are in danger of remaining undeveloped, even of atrophy. The number of brain cells functionally active is difficult to determine; but we have seen before (p. 20) that it comprises only a fraction of the entire number of cells, many of which remain forever immature.

Who will venture to deny the possibility that by proper stimulation we may vastly increase the number of functioning cells, and thus of the potentialities of thought and of motor activity?

By proper methods of stimulation the association paths from cell to cell will be multiplied, organized, and worked smooth, so that there will be a corresponding increment of mental power and of rational judgment.

Subconscious Self.—To what extent our subconscious self may become correlated with our conscious life, so that a vast area of occult organized mentality may be brought into rational co-ordination, is a matter of speculation at this time. The problem, tremendous in its possibilities, may here be merely broached.

Space and Time Concepts.—Let us also be reminded, in discussing the conditions of rapid growth, that *space and time are mere abstractions, or methods of conception*. Both are motor concepts, and depend upon rhythmical elements of variable rate. Our mind, under certain stimuli, defies "time." Many are the experiences in our dream life, or under stress of great excitement, when we live through apparently long periods of time in the space of a single moment. Time as well as space is a relative standard. Thus, mind development may "defy time."

Anatomical Structure.—We may look further for an *anatomical explanation of special gifts*. A very sugges-

tive statement is found in Church and Peterson's work on "Nervous and Mental Diseases" (pp. 159 ff.):

As a working scheme we may consider that motion is represented in three levels: First, in the gray matter of the spinal cord; second, in the Rolandic area of the cortex; third, in the highest levels of conscious thought, probably in the frontal region of the brain. The spinal level may be considered that of reflex, vegetative automatism; the Rolandic level that of motor memories; and the frontal area that of conscious, selective, and intelligent action. Thus, destruction of the highest level leaves automatic and memory action practically unimpaired. . . . In the automatism of dementia the motor memories are likewise preserved. The mid-level, the Rolandic region, may be destroyed, leaving consciousness of volitional motions and the will to execute them, but the memory of their muscular production is gone, and they default as, for instance, in motor aphasia. If the lowest or spinal level be destroyed, the mind and the memory organ have lost their tool, and peripheral paralysis obtains. There is no difficulty in conceiving certain cortical areas to be memory organs, as in the case of the higher visual centres in the parietal lobe. We may, however, go further. All thought contains the two ideas of motion and sensation. They cannot be separated, and without them consciousness is impossible. Indeed, they are in a certain sense identical. Motion is to the mind but the sensation of a change of position, and sensation is only the recognition of arrested motion. If, then, we consider the parietal convolutions as visual-memory depots, we are equally at liberty to consider the Rolandic areas as motor-memory depots. . . . In the spinal levels single muscles or groups of muscles are represented. In the motor cortex co-ordinate and functionally associated movement memories are located, and in the highest level resides their volitional control and the power to recall and select them.

The authors here consider pathological effects from impairments of one or the other of these levels. But it is equally simple to conceive that one or the other be unusually well established and developed, well organized,

and well trained. We may thus easily deduct consequent special gifts such as have been described in the foregoing. If the localization of functions as given by Church and Peterson differ in some details from the contentions of Professor Munk, as cited before, they agree in the main proposition that we are dealing with visual and motor memories.

Specially favorable conditions of growth, through proper nutrition and other environmental causes, enter into the process. There are, of course, also congenital and hereditary causes, including race peculiarities, favorable mixture of types in the parents, reverberations of ancestral excellencies, etc.

Thus it would seem that after all we have been discussing perfectly normal processes, and that we have no right to assume pathological deviations in these cases. It is certainly conceivable that under favorable circumstances exceptional excellence, genius, and even precocity may arise without detriment to the individual.

Pathological Complications.—Yet many factors enter into these exceptional developments which are difficult or impossible of control. The hereditary and ethnic factors have already been mentioned and will be referred to again. If a virile stock is a favorable predisposing element, a weak heredity forms a hollow foundation for precocious development, and a “mortgaged inheritance” of biological elements will burden the debit side of the life ledger disastrously. *We may readily and gladly concede that the second group of exceptionally bright children, the non-pathological group, as described before, will furnish us its complement of leaders of thought and action, of genius and brilliancy.* But a very large number of all cases of genius will show neuropathic tension and danger to

health somewhere. Drawing upon the "second breath" too freely may become a pernicious habit, so that the reserve force is exhausted for cases of emergency.¹ After all, each stage of growth has its distinct function, and it is well that we be sure to give each stage its fullness of opportunity, even though we may admit that rate and rhythm differ in individuals. Excess in anything is apt to warp development.

Dangers of Artificial Stimulation.—Artificial stimulation and insistence upon overprecision in early childhood may, as Stanley Hall shows, produce arrest of development. If, for instance, we expect too much of finer muscular adjustment in the young child (as in certain kindergarten and primary practices), chorea is often the result. The same author says:²

Among the chief external causes of diseases at this age (adolescent age) are all those influences which tend to precocity, *e. g.*, city life with its early puberty, higher death-rate, wider range and greater superficiality of knowledge, observations of vice and enhanced temptation, lessened repose, incessant distraction, more impure air, greater liability to contagion, and absence of the sanifying influences and repose of nature in country life. At its best metropolitan life is hard on childhood and especially so on pubescents. . . . Civilization, with all its accumulated mass of culture and skills, its artifacts, its necessity of longer and severer apprenticeship and specialization, is ever harder on adolescents. . . . When we add to these predisposing causes the small and decreasing families, the later marriages, so that more and more are born of postmature parents and thus physiologically tend to precocity; the overnurture of only children, who are so prone to be spoiled and ripened still earlier by unwise fondness; the mixture of distant ethnic stocks that in-

¹ Barr ("Mental Defectives," p. 125) intimates that backwardness and precocity in early childhood are related and are equally indicative of an abnormal ego.

² "Adolescence," I, pp. 321 *ff.*

crease the ferment of adolescence by multiplying the factors of heredity and so increasing its instability, we no longer wonder that many in these most vulnerable years make more or less complete shipwrecks at every stage of these hothouse demands which in the entire life of our race are so recent. Under these provocations, some instincts spring into activity with a suddenness that is almost explosive, and so prematurely, that as, *e. g.*, with sex and drink, the strong and complex psychic mechanism of control has no time to develop and forbidden pleasures are tasted to satiety, till the soul has sometimes not only lost its innocence before it understood what purity and virtue really mean, but life is blasé, a burnt-out cinder, admiration, enthusiasm, and high ambitions are weakened or gone, and the soul is tainted with indifference or discouraged.

Normal growth is a process of maturing.

Any warping of this process, any excessive growth in some particular direction, especially in the line of specific intellectual activity, is apt to produce an unbalancing of the emotional equilibrium. This is the reason why genius is often characterized by extreme self-centredness and selfishness, even by a tendency toward cruelty and sexual license.

An International Problem.—That the problem of the exceptionally bright child is one which confronts other nations in about the same manner as it does our own, is evidenced, among many other facts, by an interesting article from the pen of a Japanese investigator, Yasusaburo Sakaki, professor of psychiatry at the Imperial University of Tokyo. He writes:¹

I have endeavored to arrive at some trustworthy data as to the causes and varieties of abnormal intelligence in children, and to draw from these data some conclusions as to the treatment

¹ "Abnormally Intelligent Pupils," translated from the German in the *Int. Archiv für Schulhygiene*, by W. A. Stecher.

appropriate to each type. With this purpose in view I examined all the children in the Normal School at Fukuoka in Japan, in which work I was assisted by Mr. Tomoziro Tomono, who is attached to the school in question. All the children showing an advanced degree of intelligence were set apart for special investigation. We found their number to be 79 out of 332. These selected children were classified according to definite types into seven groups, and were made the subjects of a series of tests for mental capacity, and the results were tabulated. The normal children were also tested in the same manner, and the results compared with those derived from the abnormal children. *We found that only one class of abnormally intelligent children was perfectly free from any pathological taint, and that these were the only children who possessed stability of nerve-power and who exhibited a uniformly progressive mental and physical development.* These we have called the true cases of abnormal intelligence, the others being children of the "nervous" type, precocious children, children mentally advanced but deficient in physique, children who can be spurred to mental attainments above the average through external stimulation, but who are not able to maintain this level for any length of time, and, finally, children with remarkably good mental capacity who are lacking in feeling and in will.

Conclusion.—Professor Sakaki's findings tally very well with the views presented in this chapter. Exceptionally bright children, especially those of the last three classes, need a very careful consideration and must be educated in a manner which will be fair to them and helpful to the race. At present they receive less attention than the feeble-minded and defective. Yet their number is at least equal to the number of abnormals at the lowest end of the scale. *They are infinitely more worth while than those.* For from them come our leaders and builders, our banner-bearers and thought-heroes, our saviors and our martyrs—as well as our destroyers, cranks, perverts, and felons, the Mephistopheles and the Tartuffes.

CHAPTER VIII

PSYCHOPATHIC DISORDERS AND PSYCHOPATHIC CONSTITUTIONS

Dementia vs. Amentia.—In the foregoing chapters attention has been frequently directed to causes of mental deviations and of social failure which are found in the province of disturbances in the nervous constitution and the psychic life of children. Psychopathic disorders will explain the difficulties of many cases of exceptional development, whether they tend downward or upward. Even in distinct abnormality we must differentiate between *dementia* and *amentia*. The latter denotes *absence of mental endowment of the normal human type*; the former indicates *loss or destruction of mental powers* which the individual had once possessed. Mental defect, therefore, may be one of two kinds: either it is the product of disease affecting a potentially normal mind, or it is due to lack of development, so that an individual does not advance beyond the animal or primitive stage. This lack of development, again, is twofold in origin; it may be due to hereditary causes, predestining a child to perpetuate the defective character of its progenitors; or it may be the result of congenital lesions which check the growth of an originally normal nervous system. Even after birth, arrest of development may be produced by injury, disease, etc. The injury or disease which causes this arrest may be physical and physiological, as will happen in accidents, or in the weakening after-effects of germ-diseases; or it

may be psychic, as in the case of overstimulation, grief, mental shock, etc.

In this chapter psychopathic disorders will be discussed somewhat in detail.

Principiis Obsta! (Resist the Beginnings!)—It is a great pity that the beginning of these mental derangements are rarely observed, diagnosed, studied, and treated. The great German scholar, Ziehen, speaks of “psychopathic constitutions” which can be recognized in childhood. Doctor med. Helenefriederike Stelzner, a disciple of Ziehen, writes:

Contemplating all the forms of development of psychopathic constitution among school children, we shall readily discover among them a great many in which the entire complex of symptoms is at first merely suggested by some form of moral disturbance; for instance, stubbornness, difficulty of management, outspoken ego-centricity, lack of self-denial and self-discipline, non-resistance to bodily irritation, moodiness, etc. In dealing with these children, should not that kind of education be considered most effective which lays greater stress upon moral values than upon intellectual and material ones?

The fact that a good school record and examination certificate are very important for success in life, for the struggle for existence, induces many to attach too much significance to success in intellectual work and to relegate moral efficiency into the shadowy background. The natural egotism of the child is not sufficiently counterbalanced; the utilitarian principle is pushed to the front. Common rules of school education are only too apt to disregard conditions of common advance, and to substitute a vainglorious individualistic ambition which tempts the child to use his fists and elbows, so to speak, against his fellow pupils to secure his own advancement without regard to others. *This selfish conduct is found in accentuated form among psychopaths.* To be kind without receiving praise for it, to deny oneself something in the interest of somebody else without receiving a reward; to show courage in danger without

boasting of it to everybody, and similar ethic attitudes and acts are measured too low in the general valuation of conduct and progress. . . . This may sound commonplace, and yet it is important to point to these things in speaking of abnormal children, for the reason that the struggle for existence, which becomes more bitter every day, is pushing the threshold of consciousness of ethical sentiments ever higher and higher.

This arraignment of educational mistakes points out forcibly a potent cause of psychopathic development in children: the under-development of the balancing power of ethical standards and emotional discipline. Similar truths have been expressed by others.

Effect of Injudicious Training.—In the attempts made by our school systems to adjust themselves to the changing needs of modern life, much undue pressure is exercised upon the minds of the pupils. Doctor Bernard Hollander, the famous British alienist, is grievously concerned by the sudden increase of insanity in England among children under fifteen years of age. He is convinced that the increased educational demands of the present generation and the injudicious training are largely responsible for many of the milder forms of mental and nervous disorder among school children, and he solemnly warns parents and teachers that frequently the foundation is laid at this period for unsoundness of mind in adult years.

This is a serious warning, indeed, and it shows that the problem is practically the same in all parts of the civilized world. Doctor J. Victor Haberman, of Columbia University, also presents the fact that examinations of the inmates of penitentiaries, prisons, and reformatories have shown an alarming percentage of psychopathic constitutions; and he has little doubt

that the majority of these might have been spared had they been properly cared for in their youth. This observation is also significant in view of the often-made assertion that feeble-mindedness is responsible for a large percentage of delinquency.

The beginnings of psychopathic development may, of course, lie much further back than the school period. There are the hereditary and congenital conditions mentioned before. We must also point with earnestness to the earliest years of a child's life, when the initial and fundamental mistakes are made which may cause mental and moral derangement.

VARIOUS SPECIAL DEFECTS

Word-Deafness and Word-Blindness.—Many children who are found very backward in reading and spelling may be suffering from word-deafness or word-blindness. Particularly word-blindness is more common among children than is supposed to be the case. Word-blind children have normal vision, but cannot read the simplest words, or they interpret written or printed language only with difficulty. The cause is a defect in the visual speech centre in the brain. Researches into brain structure have informed us of the fact that mental and physiological functions are localized in definite areas of the brain. Defects in these areas may impair that particular function without detriment to the general mental conduct. Word-deafness is caused by a similar defect in the auditory speech centre. A word-deaf child has no impairment of the hearing function as such, but cannot perceive or recognize spoken words. A word-deaf or word-blind child has this specific defect, just as a child who is really blind

or deaf suffers in these specific provinces of his sense life without necessarily being otherwise mentally or functionally impaired.

It will be well to remember what has been said on page 125 in regard to anatomical conditions, in the region of visual perception, which are causative of excellences or impairments in the province of reading and language.

Speech Defects.—Speech defects: slow and imperfect development of the power to speak articulate words; impetuous, or indistinct or sluggish speech and similar afflictions, may all have their origin in definitely localized lesions in the speech centres. We know now that there is not only one speech centre but that there are definite and separate centres for hearing, seeing, speaking, and writing words. Defects in these centres may be born with the child, or they may develop as the result of some illness of the nervous system, as they do at times in adults. An injury to the head is often the cause of alexia (inability to read), agraphia (inability to write), or aphasia (inability to name). These impairments may be total or partial.

Agraphia Caused by Auditory Defect.—To illustrate the complications which may arise in making a proper diagnosis of cases, the following most instructive investigation may find a place here. Arno Müller, Leipzig, wrote in the *Zeitschrift für Kinderforschung*, November, 1914, on "Hardness of Hearing as Cause of Apparent Agraphia." The following excerpts will show the trend of his article:

Correctness of diagnosis in the matter of a diseased condition is the absolute prerequisite of successful treatment, in education as well as in medicine. Many a case in which instruction meets with difficulties must be given up by the teacher, because

he cannot discover the root of the evil, or because he follows the wrong course of treatment owing to a mistaken diagnosis. Mistaken conclusions are quite frequent, inasmuch as diseased psychic phenomena rarely present symptoms which can be explained only in one way. . . .

My observations and experiments concerned themselves with three cases of nearly equal pathological phenomena. The boy *N.* (Case 44) became hard of hearing before he had reached school age, in consequence of an attack of cerebral meningitis. He was able to hear at a distance of two metres, so that an independent development of language communication was not entirely prevented. . . . Later tests showed that of 21 spoken single sounds which he repeated correctly, he wrote 9 wrongly. Of these same 21 single sounds, when he tried to read them from the written copy, he could not identify 6. When 15 syllables of two letters each were dictated to him, he could not write one of them, even though he had perceived them acoustically. Instead of ZA he wrote ENNT0; instead of MA, WIEI; instead of LA, TARN, etc. He could read only two of these syllables. The dictation of the numerals 1 to 10, which were perfectly familiar to him as spoken words and in their arithmetical value, resulted in the correct reproduction of "eins" (one) only. The other reproductions had no connection with the number concept whatever. For "zwei" (two) he wrote GARNA; for "vier" (four), ZRAM; for "fünf" (five), GARMTA, etc. He could read only "eins" and "drei" (three).

Almost the same pathological symptoms were observed with the boys *M.* (Case 45) and *R.* (Case 46), so that I felt constrained to include them in my examinations. *M.* is congenitally hard of hearing, while with *R.* the trouble began at the age of 4, after an attack of scarlet fever. In both the trouble has not progressed far enough to prohibit the hearing of speech, even though it is greatly impaired. . . .

Further tests established somewhat the same conditions as previously described for the boy *N.*

The long, unsuccessful attendance at school, the presence of disturbances in two distinct branches of language communica-

tion, the general inferiority of the mental condition, and the etiological features in the three boys suggested the theory that we were dealing with diseased conditions, or with complete degenerations in the speech-centre region of the cortex. A closer study of the defects points to agraphia and alexia. The agraphic type represented is apparently motor. . . . The reading disturbances are identical with the symptoms of pure alexia (word-blindness). This consists, after Doctor Römer, in the impossibility to read words, *i. e.*, to understand the symbolism of letters and to grasp them in their connection in words; the patient sees with normal vision the optical picture of the individual letters and words, but he cannot penetrate into their meaning, the written images remain to him meaningless figures, unintelligible outlines, as are to the layman the written symbols of a strange language like Sanskrit; he can perceive, understand, and name all objects optically, but all that is written and printed he can only perceive in its outward form, not grasp and denote. He can also acoustically perceive, understand, remember, and reproduce the sound values of letters and words, only that he cannot make proper use of the optical images. It makes no difference that the three boys under observation have retained the ability to read single letters. For cases have been described in which only a limited number of letters was lost. Frequently certain especially well-known and early acquired words are still correctly interpreted. Also figures are often retained while the corresponding number words cannot be read.

Müller then reports his investigation of the pathological condition of the three boys in detail, employing for graphic representation the *Lichtenheim speech schema*, which is reproduced on next page.

Of the results of these investigations the following typical statements are characteristic:

The boys' inability to read and write is caused by the impassability of the association paths 5 and 7. The non-functioning of path 7 represents a disturbance of the relation between optic and acoustic components. The disturbance of

path 5 produces a separation of the writing motor centre from the speech motor centre. . . . Doctor Römer connects the sound motor agraphia with diseases of the motor speech centre. The same effect is produced if the association fibres issuing from *M* are disturbed. External symptoms and inner localization of the morbid phenomena in the three boys point therefore to agraphia and alexia. . . .

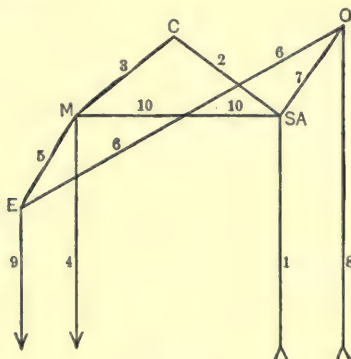


FIG. 10.

Lichtenheim speech schema.

C = word meaning centre; *SA* = acoustic centre; *M* = speech motor centre; *O* = optic centre; *E* = writing centre; 1, 4, 8, and 9 = paths of projection; 2, 3, 5, 6, 7, and 10 = paths of association.

The causes, however, need not be anatomical.

Reading and writing are faculties which can be acquired only by systematic pedagogical training. The cause of the disturbance may, therefore, also be looked for in a neglect of the functional exercise of the association tracts which was the result of *the children's special nature or of the character of the methods of instruction employed*. . . .

This latter assumption was corroborated by further careful investigations. It was found that their hardness of hearing had vitiated the normal functioning of the boys' speech centres, and that thus the diagnostic prob-

lem was solved, and the problem of special training and relief became evident. The three boys responded slowly but surely to the treatment prescribed, thus proving that they did not represent cases of pure agraphia and alexia, but plainly the effect of their hearing defects. Müller closes his remarkable statements with these sentences:

The result of our investigation is the demand that *all children in whom defects in reading and in written expression are observed, should be carefully examined as to their faculty of hearing.* As soon as the slightest degree of hardness of hearing is detected—be its effect upon spoken language ever so minimal—this defect is to be considered as the primary cause of the disturbance, *before the assumption of speech-centre defects or of general feeble-mindedness is justified.* An unsuccessful treatment of this class of children will then be a rarer occurrence.

Stammering and Stuttering are speech defects which have little or nothing to do with the brain centres, but are either the result of imitation and habit, or peripheral affections caused by nervous and psychic disturbances. In these cases the neurologist is the proper adjunct of the educator in the matter of treatment and eventual relief.¹

Defects of Number Conception.—Localized defects seem to exist in the sphere of number conception, also.

¹ Doctor William Browning, in a thorough study of stammering, comes to the conclusion that it is not primarily a disorder of the central nervous system. Nor is it an isolated, freak, or just functional affair, but is always at the start a symptom and part of a wide-spread or systemic condition. This general condition is a phase of hyperthymism (excessive activity of the thymus gland, at the base of the tongue), closely allied to or part of that known as lymphatism. Scripture and Glogau, in a recent study of stuttering, find that "speech conflict," *i. e.*, the conflict between the home and school language of immigrant children, is an important etiological factor.

Of course, the three impairments mentioned before (alexia, agraphia, and aphasia), and also defects in the motor centres have their bearings upon the handling of numbers in their spoken or written form. Some children, on the other hand, can do the abstract work in arithmetic in the school pretty well, handling figures and other number symbols with alacrity. Yet they may be found to have no real conception of number values. The psychology of number is still in its infancy. Reference may be made here to Chapter VIII, of the author's book, "The Career of the Child," treating of the mathematical evolution of the child. The *counting process*, it is shown there, is distinct from the *space concept* in number; space and quantity are related concepts. There is also, connected with counting, the element of rhythm and repetition.

In a measure, the handling of numbers seems to depend upon a physiological mechanism which we do not yet understand. Reference has been made in the previous chapter to the feeble-minded lightning calculators. Memory, visual and aural, plays a great part in these abilities. Some individuals, otherwise not at all intelligent, possess the blessed gift of an excellent mechanical memory which serves them as an almost automatic tool. Observations point toward the pre-eminently visual character of this mechanical memory; in other words, these individuals visualize with readiness and precision. The time element in these processes is a curious thing. To the conscious mind time is a succession of conscious units. But it depends largely upon emotional states how this time element will manifest itself. Short periods of time will appear unbearably long to the impatient, the grief-stricken, the sick; and it has already been

shown how under stress of excitement a person may seem to live through experiences of years in a single moment. It is therefore thinkable that similar compressions of the units of time occur in the lightning-speed calculators, whether they are feeble-minded or not.

Memory Defects.—Conversely, weakness of memory power induces failures in conscious school work. Many of the author's own cases have shown the cause of their lack of school progress to be their inability to retain visual and aural units in their memory; they fail, either as to the number and order of the units presented, or in the length of time during which they are remembered. The short visual and aural memory span is characteristic of many backward children.

So-called logical memory, that is to say the faculty of consciously associating and organizing units for the purpose of retention is, it would seem, dependent upon the physiological mechanism of memory. Through proper exercises in quick observation, concentration, and memorizing, a weak memory can be strengthened, just as a weak muscle can be improved by exercise.

Clinical Studies.—It is of the greatest importance that the psychic functions of the child should be clinically studied. Knauer suggests special tests, (1) in the ability to profit from exercise and repetition; (2) in mental fatigue; (3) in the effect of recuperation and of rest pauses, and (4) in the elementary conception of sense-impressions (content and time). He asserts rightly that these functions are of much more fundamental nature than the intellectual possessions of a child. Ordinary intelligence tests, such as the Binet Tests, may give the same results in very different individuals without disclosing the genesis of the results.

Psychopathic conditions are frequent in the group of children which the author has described as "atypical." The fourth group of exceptionally bright children, as set forth in the previous chapter, belongs to the same category or, rather, is one of the groups comprised in the term "atypical."

Dementia Precox.—Mention should be made here of the affection which is familiarly known among neurologists under the name of "dementia precox," and which really represents a confusing group of symptoms of the psychasthenic type. The precursor of this disease is now called predementia precox and is, as Doctor Adolf Meyer has shown years ago, very amenable to educational treatment. It is characterized by extreme forms of self-centredness and self-repression, so that the child soon finds himself to lead a double life. Several of the cases cited in the previous chapter, particularly those of *A. S.* (Case 42) and *H. H.* (Case 43), were of this type. Here, as in all cases of psychopathic nature, the co-operation of the skilled psychiatrist is needed.

Cases of this kind represent no longer mere isolated psychopathic conditions or symptoms, but lead over to the "psychopathic constitutions," as Ziehen has called them, or the "psychopathic personalities," as they have been called by others. In most of these, of course, it may be assumed that the trouble started from some particularly vulnerable point.

Sexual Neurasthenia.—During the period of pubertal development, there is danger of the appearance of *sexual neurasthenia*. In this period the unorganized and often excessive promptings of the sex instinct inject themselves into all other mental activities, causing emotional strain and neurotic disturbance. The sex in-

instinct at this time in a child's life is extraordinarily powerful. The youthful character is not yet strongly enough fortified to withstand these excitations which occur in all parts of the sexual tract, and which are often enough abnormally stimulated by transmitted sensations from other functional groups or through various kinds of emotional states. Thus, the overpowering instinct which is often subjected to clearly defined periodic changes drives the child into a life of storm and stress which may, and in no small number actually does, lead to masturbation, sexual perversion and inversion, crime, and prostitution. Ethics and morality are in danger of suffering shipwreck under the impetus of these sweeping impulses, which may produce, in neurasthenically inclined individuals, a distinct type of pathologic deviation: sexual neurasthenia and sexual precocity (*cf.* case of *H. H.* (**Case 43**), mentioned in previous chapter). Lying and deceiving, slander, intriguing, and theft, a morbid desire for alcohol and tobacco, are symptoms of a perverted sex instinct, or of one which is in danger of perversion. Even in the development of youthful hysteria puberty marks the time which decides the significance of this disease for the life of the child suffering from it. There may be observed depressive manias, fixed ideas, obsessions, morbid fears, forced actions; epileptic symptoms may appear or true epilepsy may develop either in its motor or in its psychic form.

Other Psychopathic Symptoms.—In the previous chapters reference has been repeatedly made to various psychopathic symptoms. There are conditions of *nervous fatigue*, of *timidity*, of *negativism* (which must be differentiated from mere disobedience, which latter is

merely a matter of habit training), and many other mental states which are psychopathic in character. We may observe manifestations of *disproportionately strong reactions to stimuli* and impressions such as pain, tickling, etc.; of subjection to *frights and terrors*, and those *disturbances of the psychic equilibrium* as in "tantrums" and fits of temper, which are almost maniacal in form; also vivid *sensory illusions, hallucinations*, and the like. Further, we have the *restless sleep*, the excessively *vivid dreams*, the *awakening in alarm*, with crying and kicking, or even *sleep-walking* (somnambulism). There are also the strange *fears*¹ and *obsessions* which induce the child to be afraid of getting dressed or undressed, of having water touch him, or of being touched by a stranger; of walking across an open square or field, or of being in the dark; the horror of noises or of stillness; of being with other children, or of being alone; and many other strange idiosyncrasies. Then there are the "*habit spasms*" mentioned in a previous chapter, also called "tics," like shrugging and jerking, the tendency to tear and soil and destroy things, etc. These manifestations may be merely occasional or transitory, and then they are counted among the so-called "bad habits"

¹ Arthur J. Westermayr, in his book, "The Psychology of Fear," says: "Reference should be made to certain abnormal forms of fear for which no excuse can be offered except that they are congenital and perhaps due to antenatal states of the mother; severe fright of the mother is known to mark the child by an unnatural sensitiveness to certain kinds of danger. As abnormal appetites are thus created, so an unnatural fear may be born in the offspring." The author is not inclined to think that Westermayr's view is tenable in all cases of strange and apparently unaccountable fears, if it is tenable at all. Some fears are indeed inherited, but not in the way Westermayr assumes, but as reverberations of primordial experiences of our remote ancestors. In this class belongs the fear of snakes, spiders, water, etc.

which are often enough perfectly natural outcroppings of instincts normal for the developmental period through which the child passes at the time; these will be lopped off by the natural process of growth and by educational influences. But when the child's conduct is distinctly pathological, the early advice of experienced specialists in education and psychiatry is required.

Children who suffer from *vasomotor disturbances* (those nervous affections which appear in the circulatory system) exhibit rapid changes of color in the face (flushes and pallor); hands and feet "fall asleep" on the least provocation, or are chronically cold and clammy. There are also disturbances in the centre of *balance*; these lead to dizziness and nausea when the child is in a rapidly moving vehicle, in a train, a swing, etc. Many children lack the power of self-control and inhibition, of concentrated attention, and are characterized by the constantly *changing intensity* of their work and application. They are irritable, morose, and "ugly," these moods quickly alternating with states of happiness and a readiness to apply themselves joyfully to any task before them. These phenomena do not indicate "naughtiness," but nervous disease.

Likewise we have disturbances in the digestive apparatus (*trophic disturbances*) which are strictly of a nervous character, such as nervous dyspepsia. They can be cured only by reaching the nerve centres which control the alimentary system.

Illustrative Cases.—Farnell mentions the following cases, "offering such traits as lack of affection, uninterestedness in work at school, absence of desire to play, inattention, idleness, fearfulness, irritability, 'dreaminess,' and evident difficulty with the sex problem.

There is no doubt but there is an internal conflict, longings or desires that influence this type of mental aberration. This is produced without any disturbance of the will and often without the child being conscious of the source of the influence. It is not uncommon in every-day life to forget names, incidents, and so forth, also to make mistakes in reading and writing and do thoughtless acts, all of which have a direct connection with our mental trends. These are not accidental, but actual, and can be traced back to an attempt, instinctively, to forget unpleasant experiences or to complete a desire by a more ethical process."

Doctor Farnell cites a number of examples, of which a few may be here quoted.

Let me refer to a boy of 12 years (Case 47), whose father died following a stroke and whose mother is alive and well. One brother committed suicide at the age of 16 years. He was of normal birth and has never had any serious illnesses. Nothing wrong was noticed until about two years ago, when he became abnormally quiet, was easily irritated, tired out, and laughed without apparent cause. At school his teacher noticed a great change: he was "lazy," not attending to his work, and showed complete loss of interest. He had no playmates, avoided both sexes and remained entirely by himself. Occasionally he would attend a lecture at the Park Museum. A few months ago he began making peculiar movements with his hands and face, would talk to himself and pace back and forth in the yard. He told his mother that life was a burden, not worth the while, and that he thought he would end it all. His intellectual tests were correct and there were no physical disturbances. This child has apparently been unable to square himself with the difficulties in life. Let me say that a great many children may show the same set of traits as the above, and possibly you may know personally children who are seclusive, quiet, non-mixers, and so forth. But it is not that alone that completes the picture, and again I may say that these symptoms given above

may offer a warning and suggest timely care, and instruction may prevent its development.

My next case is that of a girl of 16 years (Case 48), whose parents are alive and well. One maternal aunt and several cousins were insane. She is the third in a family of five. Nothing abnormal about her birth or early infancy, except that at an early age she was considered "nervous." She began school at the age of 6 years and progressed fairly well the first three or four years. She then became what the parents called "lazy," cried a great deal and didn't seem to be able to keep her mind on her work. At 13 she passed through puberty, with its wrenching and nerve-wrecking forces. She then became nervous, seclusive, quiet, non-confiding, and at the same time somewhat inquisitive and curious. She cried almost constantly and evinced marked vasomotor disturbances, such as coldness of the hands, lividity of the arms, and so forth. She had attacks of anger and occasionally the nightmare. At school she lagged behind in her class and appeared to be further handicapped by her comparison with others and her feeling of being at a disadvantage, as indicated by her apparent intellectual weakness. Physically she evidenced entirely vasomotor phenomena. Intellectually she is inferior, but she is not feeble-minded, and there is some question as to whether or not she might be insane. At all events, there is a pronounced evidence of prementia precox. The question arises, Why her intellectual slowness? What can be done? Shall we allow her to fail and, as will undoubtedly follow, become insane?

Here the problem is squarely stated. A comparison of Farnell's cases with those quoted from the author's own records is invited. Impaired efficiency of psychological function is quite common in children. A solution of the difficulty presented may not always be ready, but a proper analysis of a child's mind is obviously the first step toward the removal of nervous symptoms. A number of cases belonging to this class were reported to the "American Psychopathic Asso-

ciation" by Doctor Tom A. Williams, of Washington. Their study is illuminating. Here are a few selections:

One of these, a girl aged 8 (**Case 49**), was kept from school; a simple analysis lasting half an hour revealed that the child had become overscrupulous from injudicious teaching of physiology. The condition was rectified, she was sent back to school, and is now perfectly well.

The ardent affection of another little girl (**Case 50**) was mistakenly repulsed by the parents, which led to a melancholia. After eight hours' analysis she was cured in two weeks and restored to the class of normal children.

A boy of 14 (**Case 51**) had developed since 3 a jealousy of a little brother which caused such shame that he devoted half his time to penances, the meaning of which was unknown to his relatives. An hour's analysis and four re-educative sittings sufficed to transform his character and turn him toward useful activities.

All these were cases of poor adaptation, which was supposed to be due to inherent nervousness, more or less hopeless. Yet they were merely the result of faulty handling and required only a proper comprehension of their psychological constitution.

All were the children of people of superior attainments and conscience.

From the author's own practice numerous cases of children¹ might be added that were saved by removal from their environment into a sane and natural educational atmosphere, with much fresh air, light, and sleep, simple, nourishing food, regular exercises, manual and occupational work and a modicum of "school lessons" presented in a manner to stimulate the child's interest and to distract him from his morbid, self-centred moods.

¹ Figure 33 represents a free-hand drawing, illustrating a story, by a psychopathic boy of 14 (*K. B.*, **Case 52**). The work shows very good conception, skill and action, considering the boy had had no training. This talent was utilized as a point of vantage in redeeming the child.

Self-centredness and lack of spontaneity are among the most obvious symptoms in a psychopathic constitution. Much of positive suggestion toward higher social and mental ideals and ambitions, and toward genuine self-realization is needed.¹

The Educational Clinic.—The only practical way of detecting psychopathic conditions in children is through organized co-operation of school and home. The family physician should be a careful adviser, and the school physician a ready and determined diagnostician. Observations in an *educational clinic*, such as ought to be connected with every school system, in conjunction with medical inspection, and which will be described in the second part of this book, should be supplemented by a careful detailed study of the child of this type by an experienced psychiatrist at a *psychopathic clinic*.

¹ Doctor Louis E. Bisch, in a recent article, calls attention to the fact that *Charles Lamb* (Case 53) suffered from an attack of insanity in his early life, and this is what he wrote to Coleridge: "At some future time I will amuse you with an account . . . of the strange turns my frenzy took. I look back upon it at times with a gloomy kind of envy, for while it lasted I had many, many hours of pure happiness. Dream not, Coleridge, of having tasted all the grandeur and wildness of fancy till you have gone mad. All now seems to me vapid, or comparatively so."

CHAPTER IX

THE FEEBLE-MINDED GROUP

Vagueness of Definition.—Feeble-mindedness has been studied widely of late, so widely, indeed, that its study has overshadowed consideration of other mental difficulties to an enormous degree, much to the detriment of scientific accuracy and progress. The most remarkable feature of this study, however, is that it has not yet led to any clear-cut definition of what feeble-mindedness is. And this is curious if we remember that normality, too, has never before been clearly defined, except by negative terms. These facts show beyond the shadow of a doubt that the field of this study is yet very backward in cultivation, and that we are still dealing with practically unrelated facts. We must wait until, after the passing of generations, we have gathered a sufficient store of really scientific data, data of exact observation, from which to draw conclusions which are tenable. All deductions as yet made are tentative only, some very ambiguous, even fallacious; and many of them are based upon opinions, not on absolutely established facts.

Professor C. B. Davenport, of Cold Spring Harbor, speaks of the "vague class of the 'feeble-minded'—the incapable." Miss E. E. Farrell, in her discussion of the Goddard report on ungraded classes in New York, says: "We do not know what is meant by a feeble-minded child." Terman, in his review of the Meumann tests, writes: "It would seem that our concepts of feeble-mindedness still rest largely upon tradition. In their

characterization of different grades of mental defects psychologists are still prone to fall back upon the crude descriptions found in the earlier medical literature. In short, the psychology of mental deficiency needs to be entirely revised."

Doctor H. H. Goddard, in his recent book, "The Criminal Imbecile," contributes these statements to the definition of an "imbecile":

There are various ways of designating this type of individual. Imbecility, as used in law in this country, may be defined as "the state of mental defect existing from birth or from an early age, due to incomplete cerebral development, in consequence of which the person affected is unable to perform his duties as a member of society." The high-grade imbecile . . . feeble-minded, as he is called in England, or the moron, as we are coming to call him in the United States, is one who is "capable of earning a living under favorable circumstances, but is incapable from mental defect, existing from birth or from an early age, (a) of competing on equal terms with his normal fellows, or (b) of managing himself or his affairs with ordinary prudence." These definitions were formulated by the Royal College of Physicians in England, and accepted by the Royal Commission on the Care and Control of the Feeble-Minded.

These definitions tally in a measure with the author's own contention, as stated in various places in this book, except that "competition on equal terms with his normal fellows" is a somewhat ambiguous term. These "equal terms" bear further scrutiny.

But it is interesting to note in Doctor Goddard's statement that he practically abandons the grouping of the feeble-minded in three distinct groups, as has been customary for some time in this country, viz.: the groups of the idiots, imbeciles, and morons. He combines the two latter classes in one and ascribes to them a "mental

age" of from three to twelve years. The high-grade imbecile, according to this modification of terminology, is the moron, another example of variation in the use of terms.

Amentia vs. Dementia.—Feeble-mindedness has often been confused with psychopathic conditions. A good presentation of the difference between feeble-mindedness (amentia) and normality, on the one hand, and psychopathic states (dementia), on the other, is contained in A. F. Tredgold's work on "Mental Deficiency." He says, in part: .

The essence of mental defect is that it is incurable, and by no "special" education, however elaborate, can a case of amentia be raised to the normal standard. Some defect must always remain, and upon this fact all authorities agree. . . .

It is not, however, to be assumed that amentia is merely a subtraction in varying degree from the normal. Although the contrary might be thought, nevertheless the two conditions do not merge into one another, and between the lowest normal and the highest ament a great and impassable gulf is fixed. While the former is heavy, stolid, and uniformly dull-witted, he has yet sufficient common sense to look after his interests and hold his own in that environment in which Nature has placed him. The mildest ament, on the other hand, may show no apparent dulness; he may even be bright and vivacious, and in some of his abilities be immeasurably superior to the clodhopper. But the other faculties of his mind are not present in like proportion. Instead of harmonious working there is discord, and in possession of that essential to independent existence—*common sense*—he is lacking, and the want can never be supplied.

Mental defect occurring subsequently to mental development may be compared to a state of bankruptcy, and is more fittingly described as dementia (*de*, down, from; *mens*, mind); while the person whose mind has never attained normal development may be looked upon as never having had a bank account, and this state is designed amentia (*a*, without; *mens*, mind). In both of these, of course, there is literally mental deficiency.

These distinctions tally well with the argument presented in previous chapters of this book.

Feeble-Mindedness vs. Retardation.—Oftentimes, in speaking of feeble-minded, the mistake is made of confusing *retarded* with *arrested* development. Goddard is therefore right when he claims that “mental age” can only be determined “after the stopping-point came.” The warning which the late Doctor E. B. Huey has given in his book on “Backward and Feeble-Minded Children” should be carefully heeded:

In spite of Binet's suggestion and practice the terms idiot, imbecile, moron, and feeble-minded will continue to be thought of as terms of final diagnosis, and it is probably *best not to use them when the child gives promise of developing much beyond the limits of mental age implied by the term in question. This practice is especially advisable if the child is quite young. In these latter cases he should simply be recorded as mentally “retarded” in the degree found, with such other terms as best describe his actual condition.*

It will be found that the term feeble-minded cannot always be applied to children, especially to children under fifteen, from the mere fact of their showing any given amount of intellectual retardation as measured by any scale of tests. Usually, it is true, when the child shows more than three years of retardation, it is feeble-minded (? G.). But there are cases in which the intelligence is inhibited even to this extent in functioning or in development, from causes whose removal permits the child to prove that he was never of the feeble-minded kind. On the other hand, I shall later present notes of many cases showing less than three years of retardation, but which are undoubtedly, and some of them very fundamentally, feeble-minded. As a matter of fact, all psychiatrists know that feeble-mindedness, like insanity, involves much more than intelligence, and its correct diagnosis often involves the expert consideration of various clinical phases, and cannot be made by the automatic application of any schema or scale. It is evident, however, that diagnosis may be greatly facilitated and in the majority of cases

may be practically accomplished by a careful measurement of the intelligence.

These interesting suggestions show, however, that Huey confuses the two categories so clearly stated by Tredgold—the *dull* and the *aments*. It might recommend itself to substitute in the future the term “ament” for “feeble-minded,” as the latter term is really, in its etymology, too ambiguous, and may be applied with equal justice to various classes of lower intelligence.

The difference may also be stated in the following manner:

Arrest of development is a condition which precludes further mental growth. It is parallel to the condition which prevents physical growth after the so-called full growth has been attained. This stoppage of physical growth, by the way, is not a complete one, and we may voluntarily affect it by certain measures. Likewise, while we may speak of “mature” mentality in the sense of a finality which would seem to imply a stoppage of further mental growth, the normal individual in reality preserves the faculty of intellectual growth until his death, unless a pathological “arrest” takes place earlier. Arrest of mental development, then, means that the mind has reached its absolute limit, beyond which there is no further growth. Such arrest may be caused by many different things. There may be hereditary and congenital causes; there may be illness or injury (trauma); in some cases the real cause may remain obscure. Feeble-mindedness is a case of prenatal arrested development; no amount of training will lift the mind of a feeble-minded person above its stationary level. As said before, feeble-mindedness is the result, in a measure, of “unfinished” foetal development; children of this type

exhibit definite evidences that neither their bodies nor their "minds" have completed the normal intrauterine growth, which also passes through more or less defined stages (Haeckel's parallelism between "phylogeny" and "ontogeny"). But arrest may occur at almost any stage of an individual's life, so that its condition is not identical in all cases, and its levels are widely different.

Retardation, on the other hand, is dependent upon individual rhythm and rate of growth, or upon opportunities which affect growth. It may vary in its rate at different periods of a child's development, periods of slow growth alternating with others of faster progress, mentally as well as physically. In extreme cases of retardation, when the cause is an excessively slow mental growth rate, or when external retarding influences are very powerful, the line between retarded and arrested development may be difficult to draw; but the occurrence of such cases should not vitiate the general argument.

Among the accidental and external causes of retardation the physical handicaps play an important part. Economic conditions and malnutrition have their sinister influence. It has been shown that the children of districts like the Chicago stock-yards or of the tenement-house slums of our metropolitan cities are invariably the victims of retarding influences. Other causes are temperamental, others racial. Among the children of our immigrants temporary retardation is caused by unacquaintance with the language, custom, and spirit of the land.

Causes of retardation not so patent and rarely discussed must be found in those serious conflicts to which many of our children are exposed. There are conflicts

in the home: different standards of discipline employed by father and mother; emotional tensions due to dissensions in the family circle, which throw the child into conflict between himself and either parent, or brothers, sisters, and other relatives. Often there is a grave conflict as to whether the home is maintained as a home for the child, or for the adult members of the family; and usually the child is sacrificed to the comfort of the adults. There are conflicts between the demands of the home and those of the school; conflicts between school standards in different communities, or within single schools of the same district. There are conflicts between the moral standards of communities and those of the child's home or church. There are conflicts between the physical, mental, and emotional forces within the child's own personality, and many other conflicts in which the child either loses or barely keeps up the game. All these are contributory to retardation.

Inadequacy of "Mental Age."—Of the Binet tests further mention will be made in a later chapter. At this time it may merely be stated that none of the author's distinctions are made upon the basis of Binet's grouping by what is called "mental age." The term "mental age" is supposed to indicate the mental capacity of the individual as compared with that of a child of that age. Thus, if the mental age of an individual is given as 7 years, it means that his mentality is equal to that of a normal child of 7. "Each mental age represents the abilities of the normal child of the corresponding chronological age." (F. Kuhlmann, in *Journal of Psycho-Asthenics*, June, 1913, p. 134.)

In this way the feeble-minded have been grouped so that individuals are called *idiots* if their mentality does

not exceed the mental age of 2 years. *Imbeciles* are those whose mentality corresponds to the normal mentality of children from 3 to 7 years of age. The mentality from 8 to 12 years is ascribed to the group called *morons*. The mental age of a *moral imbecile* has been stated to be 9 years, representing arrest of development at that stage.

How utterly inadequate such a grading is, in comparison with normal mentality, becomes evident at once by looking at the following table, which is quoted from a publication on the "Organization and Management of Auxiliary Classes," by Doctor Helen MacMurchy, Inspector of Auxiliary Classes for Ontario.

Mental Age	Industrial Classification	Grade
Under 1 year	(a) Helpless, (b) Can walk, (c) With voluntary regard	Low idiot
1 year	Feeds self. Eats everything	Middle "
2 years	Eats discriminatingly	High "
3 years	No work. Plays a little	Low imbecile
4 years	Tries to help	" "
5 years	Only simplest tasks	Middle "
6 years	Tasks of short duration. Washes dishes	High "
7 years	Little errands in the house. Dusts	" "
8 years	Errands. Light work. Makes beds	Low moron
9 years	Heavier work. Scrubs, mends, lays bricks, cares for bathroom	" "
10 years	Good institution helpers. Routine work	Middle "
11 years	Fairly complicated work with only occasional oversight	High "
12 years	Uses machinery. Can care for animals. No supervision. Cannot plan	" "

Any one familiar with a really normal child of any of the ages given will at once be convinced that it is an injustice to him to compare his mentality with that of

the corresponding degree of feeble-mindedness. We may even say it is an insult to compare the duller normal individuals, with their circumscribed abilities, such as Tredgold speaks of, with the morons who are doomed to standstill. Quite apart from the *factor of growth* which distinguishes the normal child, and the dull child, from the feeble-minded individual, there is such a difference in the mental fibre, in the intellectual efficiency, and in the actual life conduct that the comparison cannot be tolerated. Any system of testing and grading based upon this conception involves a fallacy. Even the differentiation of periods of development or "culture epochs" such as has been suggested in the author's system of tests has its drawbacks. But in the light of what has been set forth in various places in this book about the general principles of child development, through consecutive periods of physical and mental growth, the author would seem to be justified in presenting this method of grouping and grading as approximately true—certainly truer than the "mental age" method.

It is encouraging that this view is penetrating even into the camp of the Binet advocates. In the June, 1915, issue of *Ungraded*, a new magazine devoted to the interest of the "exceptional" child (the author of this book acknowledges with thanks even this acceptance of his terminology!), Frederick W. Ellis, Director of Social Research at the New York Neurological Institute, admits that "both 'mental age' and 'physiological age' are to be regarded from the point of view of physical growth periods, rather than in the more precise terms of months and years." As the most usable age limits he gives these: "Early childhood, 5 to 8 years. Later

childhood, 9 to 11 years. Preadolescence, 12 to 14 years. Early adolescence, 15 to 18 years. Later adolescence, 19 to 28 years." A comparison of this schedule with the one suggested by the author is instructive. But now comes the strange faith in the usability of the Binet Tests even for this schedule. Says Doctor Ellis: "In practice we have found the Binet and Simon Tests most characteristic of the later childhood period (9 to 11 years!) to be the 7-year tests; of the preadolescent period (12 to 14 years!) to be the 9-year tests; and of the early adolescent period (15 to 18 years!) to be the 10-year tests. To be fully established in one of these periods the subjects must pass *all* of the tests assigned to it." The italics in parenthesis are the author's. It is difficult to see where the line must be drawn in stretching the Binet Tests to suit individual investigators.

Or would Doctor Ellis's findings imply that American children are away behind French children in intellectual standards?

In his book on criminal imbeciles, quoted before in this chapter, Doctor Goddard gives an interesting example of the fallacy of arguing in a circle. He says:

We may further designate this type of individual (the imbecile) by saying that he has the mentality of a normal child of from 3 to 12 years of age. These age limits have been determined by examining thousands of the inmates of institutions for the feeble-minded, and comparing them with normal children. The inmates of the institutions are there because they were not capable of managing their own affairs with ordinary prudence, because society has discovered that they could not take care of themselves; they are weak-minded; they must be cared for by the public. Careful examination of such persons as have been determined by experience to be incapable of managing themselves shows that they range in intelligence, as before stated,

from 3 to 12 years. There are practically none in these institutions that have a mentality above 12. Those under 3 are called idiots.

We shall omit, in this connection, to question the reliability of the discovery, by "society," that all these inmates of institutions were really unable to take care of themselves, even if given the right opportunity; we shall not discuss the tacit admission that there are, in these institutions, persons who test above 12—an admission which vitiates the argument in some measure.

But let us remember that the determination of "mental age" as the term is here used, was made by the application of the Binet Tests. They were used with persons who had been set aside by "society" as imbeciles—for reasons which "society" thought were sufficient to so designate them. These imbeciles, if they were imbeciles at all, reacted in a certain way to *these tests*. Then these findings are used to judge of others, not yet in institutions, to determine their mentality, to eventually diagnose them as imbeciles if they continue to test below 12 by the application of these same tests. The question arises: Why the need of these tests if "society" has already other means to "discover" the imbecility of those it has already segregated? And if these other means are inadequate, how is it that the findings of "society" should be taken as a basis for the application of the new tests?

This manner of arguing reminds one forcibly of the well-known example of logical fallacies, often presented in text-books on logic, by which the existence of God is proven from the truth of the Holy Scriptures, and then the inspiration of the Scriptures is proven from the fact that they came from God:

As the Scriptures are the word of God, what they declare must be true. The Scriptures declare that God exists. Therefore, that God exists is true.

The use of any one set of tests, like the Binet, in the manner suggested by their advocates, is like using, say, an acid test in chemistry. This acid test means just what it is: a method of determining the acidity of a certain substance, *nothing more*. This may be a help in determining the nature of that substance, but alone it can never assist us in differentiating between, *e. g.*, water, gastric juice, milk, and a hundred other liquids. Likewise the Binet Tests, in their application to human minds, tell just as much as they can tell, but they do not allow the far-reaching conclusions which have been made by many of their advocates. As stated on page 150, such tests may give the same results in very different individuals without disclosing the genesis of the results.

Feeble-Mindedness vs. Primitiveness.—If we consider intelligence to mean a capacity for mental work, it is evident that one may learn a great many things within the limitations of such capacity without improving one's intelligence. Or, as has been shown before, we may raise the performance level of any given task without doing more than improving skill. Thus, Goddard is right when he defines feeble-minded children to be such as "are trainable, but not improvable in intellectual capacity." This would, however, necessitate a distinction between primitives and feeble-minded, inasmuch as primitives may possess a rather high intelligence, even though it be on a low performance level, the individual increment to community needs being small.

The problem of the primitives has been discussed in the chapter on civilization levels. For further illustration of our argument, the following extract from a paper by Charles H. Johnson, Superintendent of the Leaks and Watts Orphan House, Yonkers, N. Y., may be consulted. He said:

The slowness of mental development may be due to *racial* causes. In a comparison of white and colored children measured by the Binet scale of intelligence, Doctor Josiah Morse, of the University of South Carolina, finds that in the same course of study and with equally good teachers 29.4 per cent of the colored children are more than one year "backward" to 10.2 per cent of white children; that 69.8 per cent colored children are "satisfactory" to 84.4 per cent white, and but .8 per cent of colored children are more than one year "advanced" as compared with 5.3 per cent of white children. However, we are here on debatable ground. The advocates of racial equality will insist that such differences are only apparent, and if present are due to unequal opportunity. That, given the same opportunity, the races will show no inequality. They will say that, while it may be true that the brain of the black man is on the average about two ounces lighter than that of the Caucasian, yet the variation in both races amounts to twenty-five ounces. Also that if the brains of the whites and blacks should be jumbled together no one could distinguish the one from the other by aid of brain weights. Nevertheless, there seems to be an idea prevalent among school men that the negro child develops at the Caucasian rate until the fifth grade is reached, but after that falls behind in the competition of intellects. Cornell states that in his own experience as a teacher in a medical school handling hundreds of medical students, he recalls no negro student who was remarkable, and but three or four who were good students. The form-board test has been tried on several races and it is said considerable differences appeared. As between whites, Indians, Eskimos, Ainus, Filipinos, and Singhalese, the average differences were small and much overlapping occurred. As between these groups, however, and the Igorot and Negrito from the Philippines and a few reputed Pygmies from the Congo,

the average differences were great and the overlapping small. If the results of these and other tests could be taken at their face value they would indicate differences of intelligence between races. One American official in the Philippines complained that no natives were mentally over 14 years of age. Another stated that the Binet Tests would put it lower. The school curricula in the Philippines are graded low, because the Malay can only go so far and no further.

Of course, nobody will dispute the claim that races differ intellectually. There have been different grades of civilization produced by different kinds of people, and there will always be radical differences. But it is a very different thing to compare, by using a measuring scale, like the Binet, one race with another from the point of view of Caucasian civilization. It is certainly absurd to draw the conclusion from observations like those recorded in the clipping from Superintendent Johnson's paper that the "lower" races are on the same level with the feeble-minded. And yet, if we would take these observations "at their face value" they would indicate just that. The Filipinos, *e. g.*, even though they are mentioned in the above clipping in the first group of peoples examined, would measure up to something like the moron type. And the last sentence of the clipping would even doom them to everlasting arrest of development at a certain point.

The author has in his possession an unpublished paper written by an American district superintendent of schools among the Filipinos. This paper shows plainly that these primitive tribes responded well to educational influences when they were so directed that they attempted to develop a civilization *from within*, building it upon that of the tribe. Failure is apparent as soon as attempts are made to force *American* civiliza-

tion upon them without careful adjustment. It is perfectly intelligible why all efforts must fail, as they have failed in the case of the American negro, and in the case of every "white man's burden," to plunge a primitive people post-haste into the current of an entirely new order of civilization and of social effectiveness. Civilization is a growth, based upon biological principles and upon racial psychology.

For that matter, the school-books which the department has prepared for the schools in the Philippines prove that the Malay pupils have inspired the department with great hopes as to their educability.

Primitive peoples have much native ingenuity and certainly the faculty of growth in their own way. To compare them to aments of whatever degree is unscientific.

Feeble-Minded vs. Lower Strata.—From Superintendent Johnson's paper this other quotation is taken:

It is when we reach the higher grades of mental defect and approach the dim border-line of normality that our perplexity arises. Here are the cases that cause us our educational troubles, those who clog up the grades and finally drop out and are lost. These cases cause us our industrial difficulties, filling the ranks of the low-paid and unskilled laborers who are in and out of a job—mostly out—most of their lives. It is this class that creates many of our social problems of crime and delinquency. They recruit the ranks of criminals, prostitutes, vagrants, beggars, and insane. . . .

And we may add the expression of Doctor Clinton P. McCord, Health Director of the Department of Public Instruction, Albany, N. Y., who says:

Personally I feel that the majority of the so-called "environmental cases" will come to be seen in the near future as products

primarily of bad heredity and absence of prenatal hygiene, rather than the results of faulty surroundings. In other words, the so-called slum conditions look very much like *symptoms* of a well-defined basic disorder. They have a biologic rather than an industrial and social cause. . . . Clean the slums, clothe the dwellers there and put money in their pockets, and in a year you would return to find the original conditions present.

The expressions of both investigators are very valuable and touch very sore spots in our social life. They agree in substance with what has been said by the author on pages 49 and 50. But here again, it must be said that it would be erroneous to think that all of these cases are cases of mental defect. There are such cases among them undoubtedly, and we must admit that only a fraction of our really feeble-minded population is as yet diagnosed and cared for. But by far the greater portion of these "lower strata" is composed of individuals and groups which represent, as has been shown before, lower civilization levels, primitive elements. Some of them never have reached a higher level before; others have been brought down from a higher level by the "environmental causes" which Doctor McCord clearly underestimates. In fact, geographical or social isolation—certainly an environmental cause, although not in the sense in which Doctor McCord uses the term—is the source even of many cases of the preservation of the primitive.

It would also seem as if both quotations treat economic pressure and its causes and effects too lightly. They read almost as if they were pleas on behalf of the exploiters of the weak, exonerating them of the odium which attaches to "frenzied finance," greed, graft, and oppression.

Necessary Distinctions.—We must, therefore, make careful distinctions between the feeble-minded and the insane (the ament and the dement); the feeble-minded and the retarded; the feeble-minded and the dull; the feeble-minded and the primitive; the feeble-minded and the lower civilization levels. How to make this distinction, imperative as it is, is just the problem, and we may have to wait for further light on methods of testing and differentiation before we shall be able to make definite statements.

To recognize an idiot and an imbecile is relatively easy. But, as Superintendent Johnson justly says, the difficulty begins when we are supposed to diagnose lighter cases of mental defect in distinction from lower grades of intelligence within the precinct of normality. The confusion is greater for the reason that, as Tredgold has shown, aments may possess deceptive excellencies, while the merely dull may have none of these. As a matter of fact, the feeble-minded may learn, or be naturally gifted, to do some wonderful things. The author has observed the most remarkable skill in lace-making, artistic printing, wood carving, etc., among distinctly feeble-minded persons. They may excel even in certain mental operations, like number work, and eventually go with a fair degree of success through school grades. It has been claimed by Goddard that he discovered feeble-minded pupils even in a certain high school—which would indicate, either that his standard was faulty or that the school system in which this occurred relied on other than real intelligence tests for promotion.

On the other side, the factory methods which prevail in present-day production call primarily for a type of

human activity which reduces the human element to a minimum and degrades the human worker to the level of the machine. Most ordinary tasks of life as at present organized call mostly for skill of various degrees. In fact there is a great deal of labor, such as digging, road work, and similar performances, which are supposed to be left to the "unskilled" workman, so that it would seem not even skill is required for a great deal of necessary work. Closer analysis will, it is safe to say, show that this "unskilled" labor, while being rough labor, nevertheless requires not only skill of a definite kind, but even management of the workman's own physical resources, of his endurance quality, etc. Yet it would seem that among the hosts of those who do civilization's rough work, factory work, every-day work, the kind of work that reduces itself to almost automatic, machine-like movements, intellectual quality would not count much; that it can be done by individuals in which a sharp discrimination between amentia and dulness would hardly be necessary. All that is needed, it would seem, is a regulation through the organized forces of society to keep the elemental energies of these groups, which are incapable of self-government, within bounds.

This is the policy which has been characteristic of governments of all times. Invariably there have been upheavals and revolutions in which often enough these very same elemental energies broke forth in destructive power. Democratic ideals such as true Americanism involves cannot tolerate a policy so utterly at variance with the appreciation of individual rights.

In the chapter which treats of efficiency, on pages 29 and 31, the problems of democracy in the matter of

efficiency have been discussed. We may admit that amentals, or feeble-minded, can have as little recognition as independent citizens of a political body as have dementals, or insane. And it may further be accepted that the dull portion of our commonwealth, they who can hardly be expected to have a clear perspective of the purposes and responsibilities of government, who are generally made the tool of unscrupulous politicians—"voting cattle," as they are sometimes called, not very complimentarily—form a grave problem in the regulation of civic rights.

Yet the two classes are as different from one another as day and night. The first class is permanently outside of human society. Its members can thrive only under custodial care. They may be trained to do many things, and some things well, partly because they may be endowed with a special, although mechanical talent; partly because they may be trained in skill. They will, however, forever remain mechanical, imitative, incapable of self-direction. They may learn to be self-supporting *under guardianship*, just as a garden will pay for itself, or domestic animals will pay for their keep, and more. But they are essentially another type than the dull or circumscribed intellects, the possessors of which *have a mind* of their own, normal though meagre, with a much-contracted mental horizon, underdeveloped but developable, if not in one, then in several generations.

In fact, once being identified by the commonwealth as a promising social element, as an asset capable of adding ever-increasing increments to the civilization of their day, through the development of the efficiency factors inherent in their nature, these groups will grad-

ually be relieved from the bondage of factory methods and social repression and lifted onto higher planes of social service. Invention will be stimulated, so that real machinery may take more and more the place of the human machines, machinery which will require as much efficient service as formerly had to be rendered by the independent workman in his individual pursuits—machinery of which the linotype, the multiple printing-press, the locomotive, the automobile, are the prototypes. Out of all this will emerge a new civilization, a new union of social forces, a system of mutuality, of solidarity of interests, of higher ideals of humanity, under a form of democratic government the like of which history has not yet known.

With the development of machinery, with the substitution of mechanical contrivances for human work, with the introduction of electricity and other agencies of power into our every-day life, so that we shall more generally than now cook, and bake, and sweep, and wash dishes, and build roads, and dig ditches, and cultivate farms, etc., by machinery, much of the drudgery of the present day will disappear. There may always remain some “menial,” “unskilled” work to be done, and we may need to have drawers of water, hewers of wood, and diggers of ditches to some extent. But this work can then be done by those who are in the custody of the commonwealth: by the feeble-minded group, the group that will perform the tasks which require only imitation, direction, skill, which can be done by machine-like minds, by “domesticated” minds, by minds which are not minds at all.

Methods of Diagnosis.—In medicine methods of *diagnosis* of the various diseases have been developing

very slowly, even after medical *practice* had made considerable headway. To this day physicians differ in defining symptoms, and often disagree thoroughly in diagnosing an ailment. Where there are conflicting symptoms the physician in charge of a patient will often invite other physicians to join him in consultation for the purpose of correct diagnosis. As a matter of fact, there is still a long list of diseases difficult of exact diagnosis, regarding which widely different opinions prevail.

Medicine is as old as the race. Child study is young. Can we wonder, then, that in diagnosing children we are apt to grope in the dark when it comes to the discrimination of conflicting symptoms? Yet, it is very necessary to have some standards by which we may differentiate between the merely dull and the feeble-minded.

The *first caution* the author wishes to offer is this: Give even an apparently discouraging case the *benefit of the doubt*. Do not put him down abruptly as feeble-minded. His response may be disappointing. But this may be due to strange surroundings, as in the case of a doctor's clinic, or in the inquisition-room at Ellis Island; it may be due to timidity; to the manner of the examiner; to his way of asking questions, and to a number of other things. It requires experience and skill, judgment and charity on the part of the examiner to eliminate these disturbing elements so as to arrive at a fair conclusion. The author was present some years ago at the examination of a little boy in a well-known psychological clinic, when the examiner was ready to put the child down as mentally defective. A little questioning revealed the fact that the little fellow, who lived in a suburb of the

big city where the clinic is located, had been away from home since 8 o'clock in the morning (it was then 4 o'clock in the afternoon); had been sent from one medical clinic to another for physical examination before he arrived at the psychological clinic, and had had no lunch or rest to speak of. No wonder that his response was slow, sullen, and unsatisfactory.

The *second caution* is *not to confuse the requirements of work with adults and the requirements for testing children*. Adults have set ways of their own which it is often difficult to penetrate. Again, an adult will approach a task with a certain worldly-wise suspicion that there is a catch somewhere, different from the unsuspecting manner of a child who will accept a test on its face value.

Thirdly, even with children, *one sitting will rarely suffice*, except in very outspoken cases. We should heed Huey's counsel, who advises against employing terms of finality with children, especially young children, where there is the slightest chance of growth. Children who are doubtful as to their mental calibre should be in *observation classes or schools* for periods of varying lengths, so that there be opportunity for the fullest measure of individual study of the elements of growth and development.

Fourthly, every mental test should be preceded by such *physical tests* as will determine the state of a subject's body health and the accuracy of physiologic function. The *mental tests* should be directed mainly to ascertain the subject's *common sense*, and whether his mental faculties work in harmony, no matter what their range may be. Tredgold's statements as presented on page 161 offer a safe basis of judgment.

Fifthly, let us understand that *illiteracy* is not necessarily a danger-sign. Not only with immigrants would a literacy test be very misleading, but even with children who have attended an American public school. There are the elements of opportunity, of poor teaching, of sense defects, of defects in the speech centres, as described before. There may be under-development of the visual memory. But more fundamental than these things is the fact that there are children, representatives of the primitive groups, or of the non-literary types, who will battle unsuccessfully with reading and writing, with spelling and long division all their lives, and yet be quite intelligent, very far from being feeble-minded. There have been thousands of years of civilization when the arts of reading and writing hardly existed at all, or were the gift of the few; there are thousands of honest and efficient men and women whose eyes will forever be puzzled by the printed symbols of spoken words, and whose hands will but clumsily and ungrammatically write out their thoughts.

In his work with immigrants suspected of mental defect Doctor Howard A. Knox, of the United States Public Health Service, Ellis Island, devised several interesting performance tests which require above all things *judgment*. He described them first in *The Journal of Heredity*, Washington, vol. V, No. 3 (March, 1914). There is the Cube Test, which will be described further in a later chapter; the "imbecile" test (a kind of form board; Knox says that a normal child of 6 can fit all the cut-out blocks into their places inside of five minutes, with not more than six false moves); the "Casuist" Test (another form board, requiring the intelligence of a normal 12-year-old child); and as the

most difficult test the "feature-profile" test (blocks have to be fitted into grooves to complete a human face).

In the author's own practice, which will be described later, much stress is laid upon a combination of tests which are intended to ascertain the child's motor control and constructive ability; his sense of form and fitness; his train of ideas and association of thought; his power of concentration, discrimination, and logical expression; his appreciation of a task, of a situation, of the sequence of events, etc. In this wise the fundamental difference between the merely dull and backward, on the one hand, and the truly mentally defective, the ament, can be established with a fair degree of certainty.

Characteristics.—As a further guide to those who have difficulty in appreciating this difference, I will quote some essential points from Doctor Knox's enumeration of proofs of mental defect, in the sense of feeble-mindedness. According to his ideas, these individuals possess the following common characteristics:

1. Inability to make use of such knowledge as they may have acquired.
2. Faulty reasoning and judgment and an inability to correctly estimate sizes, shapes, and forms.
3. Lack of ingenuity and native ability. Defectives are usually only capable of performing work that they have already learned after painstaking training in much the same way that an animal is taught tricks. They are unable to act and to think for themselves.
4. Faulty attention and memory.
5. Exaggerated egotism.
6. Selfishness and absence of the altruistic sense.
7. Emotional instability; ill-timed mirth and grief.

8. Exaggerated suggestibility.
9. Inability to withstand temptation.
10. Early brain fag and absence of the power of sustained energy.

Any one of these characteristics may be discovered in people not feeble-minded, through lack of training or through special defects. But the clinical picture of the ament combines these features in well-defined form.

Final Criterion.—Those who have carefully read the author's definition of efficiency (pp. 18 *ff.*) and of normality (pp. 77 *ff.*) will appreciate this statement: the real difference between the normal and the potentially normal, on the one hand, and the feeble-minded, or ament, on the other, is determined by the criterion of *efficiency*. In other words:

A person who has efficiency, no matter how low his performance level or how limited his skill, is actually or potentially normal—perhaps dull, but never feeble-minded.

Inefficiency marks a person as an ament, no matter how much skill he may be trained to develop, or how high his performance level may be in terms of skill only.

"Common sense" is only another term for efficiency, mentally speaking. The other elements of human efficiency have been enumerated in their proper place.

THE PRAYER OF THE DEFECTIVE CHILD

WILLIAM FRANKLIN ROSENBLUM

O Lord, I come to Thee as the Supreme Comforter. I am called the defective child. The sons and daughters of men turn from me. They look at me in pity and in scorn. My father thrusts me from him. My mother weeps over me and mutters: "These are the wages of ignorance and sin." The teacher says I am "backward" and hopeless. My classmates call me "fool."

O Lord, what have I done? Tell me, Thou who art all-wise and all-merciful. What have I done? Do not turn from me, O God. Give me love. Oh, how I hunger for love. For the strong embrace of a father, for the soothing caress of a mother. And how I yearn for playmates, yet none will play with me.

Is it a sin to be a defective child? Turn not from me, O Lord, I am innocent—innocent—innocent.

From the *Survey*, Sept. 25, 1915.

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CHAPTER X

JUVENILE DELINQUENCY

What Is Crime ?—Does crime consist only in doing what is forbidden by law? There is many a thief who steals by legal methods. There is many a murderer of soul and body who destroys without calling forth the operation of the law. Said W. R. Hearst, in an editorial published soon after the drowning of over one thousand people in the *Eastland* disaster in Chicago in July, 1915:

The safest kind of murder is wholesale murder. If you kill one man you are hanged. If you kill a thousand you go free. If you kill a hundred thousand you are a hero.

The *Slocum* disaster killed 1,700 people to make a few extra dollars. One little subordinate was condemned to jail and soon freed.

The *Titanic* raced through the ice to please the vanity of one man. Fifteen hundred were killed. No one was punished.

People by the thousands are burned in unsafe buildings, drowned through carelessness and greed and no responsible person is ever reached. . . .

On the other hand, there is many a person caught in the net of the law who is in reality a perfectly honorable man or woman. There are legal offenses which are not moral offenses. Law is very surprising in many of its workings, showing the limitations of the human mind in codifying rules of conduct. In a certain district in Ireland a man who had stolen a pig was put

in jail for three years; in the same court, a man guilty of manslaughter received a sentence of only one year. In the State of New Jersey a young lad was recently put in prison for one year for killing a rabbit (which was against the game-laws); the same court sent a man who had brutally maltreated his wife to jail for three months. Examples of this kind of "justice" can be multiplied.

Law is a convention for the convenience of what is considered an ordered community life. It is largely a matter of force, just as government is a matter of force. The time has not yet come when reason and psychologic insight will govern nations.

Sometimes the valuation of a man's deed depends upon his success. Was *Napoleon* (Case 54) a criminal or a hero? Was *George Washington* (Case 55) a traitor or a patriot? Points of view differ in the matter of judging historical personages, and one who is dear to millions may be denounced by other millions. The present war is full of such divergences of estimation.

Again, the valuation of a man's character and his social standing may depend upon local standards and opportunities. America is full of derelicts from European countries who were "shoved off" by their relatives and sent across the sea to escape disgrace and legal prosecution in their fatherland. Some of these went under. Many, however, learned their lesson in the hard school of life, or found their opportunity to make good and to show what stuff they were really made of. It was, at one time, proverbial that it was never safe to ask a Texas gentleman or an Australian settler about his past; he might answer you with a bullet from his revolver. But these men with a shrouded past made

a new civilization. Add to these the many escaped convicts who had been banished to a penal colony in the Pacific and succeeded in starting life anew in some far-away settlement, and you have a variety of examples illustrating the strange relation between law and crime.

The Veneer of Civilization.—Our civilization is as yet a very superficial thing. "The veneer," said an editorial writer some years ago in *Current Literature Magazine*, "which has after many centuries been spread over our primitive and barbaric instincts, is very thin, even at the best; and it frequently takes but a generation or so of ignorance, poverty, and isolation to wear it away to the vanishing-point."

It is well that we should make it very clear to our own minds that our modern sensitiveness to crime is really a very new thing. What we now, at least theoretically, condemn as criminal has been common practice in past centuries, at least under certain conditions, but quite generally, and much of what we call crime is nothing but a continuation of these practices and a recrudescence of primitive instincts and modes of action.

Let us remind ourselves of a few of these things.

Man's Inherent Savagery.—Arthur McDonald, in "War and Criminal Anthropology,"¹ says:

According to geology and prehistoric anthropology, man was a savage hundreds of thousands of years. The world has been civilized only five or six thousand years, and civilization is necessarily on the surface of human nature. . . . Civilization, though its foundation be comparatively shallow, can, nevertheless, suppress or cover up man's deep-seated savagery, causing it to remain dormant.

¹ *Pacific Medical Journal*, April, 1915.

Dormant, yes, but not dead.

The handling of offenders, whether they were offenders against the social order, or against liberty, or against despotism, has never been characterized by anything but cruelty. Let us be reminded of the horrible custom of torture; of the studied cruelty in putting men to death by impaling them alive on stakes, or crucifying them, or burning them alive. Even hanging by the neck, the killing in an electric chair, or the execution by shooting to death cannot claim for themselves much "humanity." Our modern prisons are better than the dark, underground dungeons of old, with their lack of air and comfort, with their filth and vermin. But the modern prison is a very recent thing, indeed. Besides, in other parts of the world, conditions still exist which defy description.¹ And we must not forget that our mode of life has changed, and to one who is accustomed to even modest comfort of the modern kind the very

¹ Under the caption, "Most Terrible Punishment in the World," *Popular Mechanics* for December, 1914, has this report: "Political offenders in parts of Mongolia are punished by lifetime immolation in coffin-like boxes stored away in dark dungeons. These boxes are only large enough to contain a man. There is but one aperture, and that no larger than the head. His hands are manacled, and twice a day attendants bring food and drink, which are placed in the shackled hands outstretched through these round windows, which are his only communication with the world. Many highly educated Chinese, so it is said, are imprisoned here. Within the cramped box one cannot sit upright or lie flat, and a gleam of daylight is seen only when the door swings open to admit the attendants bearing food." The magazine illustrates this information with pictures showing some of these horrible, filthy prison-boxes in a dungeon in Urga, in northern Mongolia.

In Persia to-day the most cruel punishments are in vogue. Perforation of the nose, cutting off of one or both ears, chopping off the hand, are quite common. Torture is still employed for the purpose of forcing a suspect to confess a crime which he possibly did not commit. One form of this torture consists in placing red-hot coals on the top of the

best of our modern prison-cells is a terrible thing. Besides, not many are "best." The story of our American prison has not yet been fully told.¹ Imprisonment even in a civilized dungeon for years or life is barbaric. Our dealings with the criminal are still very unenlightened. Can we forget the lynchings, the "law of the plains," the "unwritten law," the "third degree"?

War and the Primitive.—The still-prevailing custom of duelling to avenge a gentleman's "honor" has its counterpart in the nation-wide duels, or wars. At the present time, when the greatest war of all history is being waged between the most civilized of modern nations—employing methods of mutual destruction which are the product of the most advanced forms of scientific research and mechanical skill as well as of the most fiendish impulse of maiming and killing—who can say that we have advanced very far beyond the primitive instincts such as would characterize a "criminal"?

head, which has previously been carefully shorn of all hair. Capital punishment is inflicted as a public spectacle, with all kinds of slow methods of causing extreme pain before death finally relieves the unhappy victim of Oriental "justice."

And what about the political prisoners in the Siberian mines? About the French prisoners' colonies on Devil's Island, etc.?

Must we be reminded of the Terrible Three in Venice? Of the Inquisition?

¹ Those who read Jack London's "Star Rover" will doubt whether we have reached a very high level in prison methods in these modern days. Morrell, quoted on page 6, who went into a California prison soon after his twenty-first birthday under a life-sentence, spent five years of his term in a dungeon. As an inmate he has seen, as he reports, the "bull-ring," the "chloride-of-lime cell," the "tricing-up irons," and other forms of torture formerly inflicted on many convicts in prisons throughout the country. At the end of sixteen years he was pardoned. At his home in Philadelphia (South Fifty-sixth Street) he is now organizing "The Honor Men's League," with volunteers from prisons for military service.

The lust of battle is in man's heart now as ever it was in the breast of the brute caveman who slew his neighbor with his rude weapons of stone, and with clubs broken from the branches of trees. The "God of Battles" is implored by either side to give the victory. This "God of Battles" is nothing but the "God of Commerce," that is the God of Selfishness who impels nations to drive the competing nations from the markets of the world, by means fair or foul. Brute force and cunning are still the reigning endowments that decide success.

Says Professor G. T. W. Patrick, of the University of Iowa, in an article, "The Psychology of War," in the *Popular Science Monthly*, August, 1915:

The student of psychology will . . . see that the history of mankind for thousands of years has been a history of incessant warfare and that the new economic and industrial conditions which have made war irrational are not more than about one hundred years old, while the human brain is practically the same old brain of our fathers and forefathers, deeply stamped with ancestral traits and primitive instincts, which cannot thus suddenly be outgrown. It is society which has suddenly changed, not the units of society. . . .

The high tension of the modern workaday life must be periodically relieved by a return to primitive forms of behavior, as in football, baseball, hunting, fishing, horse-racing, the circus, the arena, the cock-fight, the prize-fight, and the countless forms of outing. Man must once again use his arms, his legs, his larger muscles, his lower brain centres. He must live again in the open, by the camp-fire, by the stream, in the forest. He must kill something, be it fish or bird or deer, as his ancestors did in times remote. . . . Periodically, however, man seems to need a deeper plunge into the primeval and this is war.

What he says tallies with the previous quotation from McDonald. Perhaps no other people in the world are

so close to such recrudescences of primitive instincts as are the Americans. In fact, quite apart from our desire to shake the dust of civilized life from our feet and to seek the wilderness for recreation in camp life, we have been beginning civilization over again with every new State that has been added to the Union. The ranchers and trappers of the "wild West"; the mining prospectors in the ore-bearing mountains; the dwellers in the camp towns at the fringe of civilized life, where the beginnings of settlements are made—have their own laws. The reckless self-assertion of the desperado who makes the "tenderfoot" dance to the music of the bullets from his revolver, is a favorite theme of our novel-writers.

Reverberations of Primitive Instincts.—Quite apart from these more brutal forms of primordial recrudescences, are we so far away from mediæval and primitive methods of life and conceptions of right and wrong? Are our habits of cleanliness so far advanced that we do not allow any filthy tenements and unsanitary back alleys? Is our respect for the other fellow's property so great that we disregard opportunities for appropriating it when they present themselves to us? The old story of the fellow who steals a loaf of bread being put in jail while the grafter who steals a million is elected into the common council is still true in some cases. Our business ethics are dominated over by business greed, and it is sometimes seriously discussed whether a business man, in order to sell his goods with profit, can really always tell the truth. What must we think of the swearing off of taxes? Of the influence of corporations upon the making of laws? Of the cruel exploitation of children so that we must have a National Child

Labor Committee? Where is our social conscience? Is the kind of conscience which we claim really characteristic of our well-advertised modern civilization?

The fascination which bright things have upon primitive man, and the elemental instinct for pilfering and stealing, manifest themselves daily in the conduct of many people. One of these manifestations appears in the souvenir craze. Hotel men recognize the widespread nature of this craze so fully that they are accustomed to put down against profit and loss the disappearance of thousands and millions of spoons, napkins, china, and other things which the "collecting instinct" of guests, especially women, have prompted them to take away in their travels.

The old instinct of trusting to chance, which was perfectly normal with the hunting nomad, is coming up constantly in our games of chance, in our gambling and betting habits, and in the proceedings of the stock exchange. The author knows personally perfectly normal and splendid men and women who will now and then be caught in the fever of stock-gambling, in margins and futures, often ruining themselves and their families without realizing that they have done so because they have allowed a primitive instinct to overpower their modern social conscience. They have fallen back on the lower brain centres—the higher associations taking a vacation, as it were.

Racial Elements.—In previous chapters reference has been made repeatedly to the differences in mental and moral attitude due to racial causes, and to differences among the civilization levels in modern society. The various races of the world, with their various historical experiences, have developed very different codes of

ethics and very different mental processes. The tortuous mental methods of the Orientals, with their singular insincerity and subtle cruelty, are well appreciated by those who know the Asiatic mind. The "Black Hand," the "Mafia," the Chinese "Societies," and similar organizations testify to the peculiarities of racial types foreign to the average American. At the death of the former Mikado of Japan an illustrious Japanese general and his wife committed "harikari," that is, suicide by disembowelling, in honor of the departed—a procedure so horrible that our Western mind cannot grasp its possibility. In the mixture of races in a commonwealth like the American these racial differences must be taken into account as seriously as must be the other conditions which allow recrudescences of the primordial.

Juvenile Offenders.—All this preliminary argument was for the purpose of giving the right background and perspective to the problem of juvenile "delinquency." This problem has been looming up with increasing force in late years, and through the establishment of children's and juvenile courts, and of research departments connected with them, in some places, it has been studied from various angles.

The foregoing may convince some of us that we should treat this problem with caution.

Delinquency and Feeble-Mindedness.—Much stress has been laid by some upon the effect of feeble-mindedness as a potent cause of juvenile crime. There is no doubt that a certain class of mentally abnormal children is potentially or actually criminal. But the author is inclined to put the percentage of this class of criminals low. It is interesting to note how even those who believe in imbecility as an important factor in crime speak

more particularly of a certain class of imbeciles—the “moral imbecile,” the “imbecile with criminal instincts,” and the like. Doctor Walter E. Fernald describes imbeciles with criminal instincts, saying that “while in mere memory exercises they may excel, they have weak will-power. The power of judgment is defective and uncertain, and often determined by chance ideas, not by the outcome of past experience. Thought is scanty, limited mainly to daily experiences. They are unable to grasp and utilize the experiences of life.” He has never known an imbecile to exhibit traits of remorse. Correction or punishment is of little effect. He continues: “Every imbecile, especially the high-grade imbecile, is a potential criminal needing only the proper environment and opportunity for the development and expression of his criminal tendencies.” He suggests that cases of imbecility with criminal propensities can be recognized at an early age, before they have acquired facility in crime, and should be permanently taken out of the community.

Similarly Doctor Kräpelin describes his conception of “moral imbeciles” as follows: “Their lack of sympathy is manifested from youth up in their cruelty toward animals, their tendency to tease and roughly use playmates, being unable to yield to moral influences. They develop the most profound selfishness, a lack of the sense of honor, and of affection for parents and relatives. It is impossible to train them because of the absence of love and ambition in their constitution. They tell falsehoods, are crafty, deceitful, stubborn. Their egotism becomes more and more evident in their great conceit, their bragging and wilfulness, their inordinate desire for enjoyment, their violence and dissi-

pation. They are incapable of resisting temptation and give way to sudden impulses and emotional outbursts, while the susceptibility to alcohol is especially prominent."

Doctor Healy, in his book on "The Individual Delinquent," publishes facts which should be carefully compared with the statements made by the investigators quoted. He writes:

The group of individuals properly designated under modern nomenclature as idiots rarely, if ever, are criminals. In practically all cases they are found so intolerable socially on account of their mental defect that they are early segregated and protected. The middle grade of feeble-minded, namely, imbeciles, are more frequently encountered in connection with court work, but are not at all numerous. We ourselves have seen less than a dozen cases among 1,000 young repeated offenders, but readily concede that in certain institutions where older chronic misdeameanants are sent a larger proportion might be found. It certainly is rare that imbeciles become major offenders. This is because they are very often readily perceived to be socially undesirable, and while young are sent to institutions for the feeble-minded.

The fact which Healy's investigations point out as most important is this that "as we go up in the scale of mentality we naturally find more ability to be an active delinquent."

That the percentage of feeble-minded among our youthful delinquents is much smaller than some investigators used to think is being proved by later researches. Of the 1,276 children who were arraigned during the year 1913 in the children's court of Buffalo, only 53 were found to be retarded in mental development (a little over 4 per cent). Of these 53 only 8, or about two-thirds of 1 per cent of the total, could be pronounced

distinctly feeble-minded, using the Binet scale. In the Seattle Juvenile Court, in 1912, careful examination revealed only 6.4 per cent of the delinquents to be feeble-minded, the majority of them so-called "border-land" cases. A study which Miss Augusta Bronner made on 500 delinquent adolescents is published in the *Journal of Criminal Law and Criminology* of November, 1914. In her examination she used first the ordinary school methods to test the scholastic standing of the subjects. Those who were deficient in these subjects were tested with the Binet scale. This is her conclusion: "On the basis of a study of more than 500 cases in a group as little selected as is possible to obtain, we find the percentage of feeble-minded to be less than 10 per cent, while the group of those normal in ability exceeds 90 per cent." Had Miss Bronner employed a more flexible scale she would probably have found the percentage of feeble-minded still smaller.

Even if, in some larger centres of population, the percentage should be found to be greater, the methods of testing would have as much to do with this result as the local conditions of congestion, economic pressure, etc., and no sweeping generalization is justified.

The feeble-minded delinquent, as Healy showed, is apt to be a minor offender, not only because imbeciles are early recognized and segregated, as he says, but also because they are as a rule incapable of comprehensive planning. The low-grade delinquent who would present real danger is the one who has preserved some special abilities which are not counterbalanced and controlled by other intellectual elements, or by sane moral motives. There are also those who have defects in special mental abilities which throw the normal func-

tioning of the mind out of gear. Healy enumerates language defects, defects in arithmetical ability, in judgment and foresight, and in self-control. It is plain that these individuals are by no means necessarily feeble-minded.

The really dangerous and successful criminal is usually a person of good intellectual endowments whose career has been warped by an early derailment of some kind.

“Psychopathic Personalities.”—Professor Thomas H. Haines, of the Bureau of Juvenile Research, Columbus, Ohio, writes:

There are cases of delinquency in which experts will agree that there is deficiency of the moral or social organization, while no definite defect in intelligence can be made out. There is defect in the organization of the self and in the power of self-control. This defect is inherent, also, and cannot be remedied by education. This class of cases some are classifying with defective delinquents. They are close to what have been called psychopathic personalities and cases of moral insanity. The defect is, of course, more difficult to define than a definite intelligence defect. It is also less certain that it is congenital and non-recoverable. For these reasons attempts to reform, through most skilfully guided education, should be made. This is the class for our reform schools. No clear defectives should be sent thither.

If we compare this statement with those of Fernald and Kräpelin, we may be inclined to think that even the cases the latter investigators had in mind are really of the psychopathic kind. Unfortunately, Professor Haines's statement contains a self-contradiction. If “the defect is inherent, and cannot be remedied by education,” it is difficult to see how it can be “recoverable” through skilfully guided education in reform schools.

Referring to Chapter VIII, on "Psychopathic Disorders and Psychopathic Constitutions," the author wishes to state it as his opinion that indeed many youthful delinquents are the victims of neurasthenic conditions. Neurasthenia implies lack of nerve poise and a generally unstable nervous condition. There are subliminal upheavals which bring instincts and impulses to the surface without restraint, which in the child of proper nerve poise are held under the control of his inhibitive power. Hysteria is not uncommon among children, and is the source of many manifestations of this kind. The development of puberty and adolescence often leads to crises in the lives of children when the awakening sex instinct plays havoc with the direction of the will. Masturbation, excessive sexual imagination, and all those phenomena which Professor Freud describes in his theory of dreams in their relation to early sex manifestations, must all be considered in studying the causes of juvenile delinquency.¹ It is a well-known fact that incendiaries (pyromaniacs) are almost always of adolescent age, so that the tendency to set fire to things seems to be an expression of a perverted sex instinct. Generally speaking, all criminals begin their criminal career in the adolescent age. It is thus demonstrated that this period in a child's life is beset with dangers requiring the most careful educational attention. Again, it is often the exceptionally bright child, especially the type suffering from psychopathic tension (the fourth group as described in Chapter VII) that may develop, through misdirection of its potentials, success in criminal activity. Leaders may be-

¹ Cf. following chapter, also p. 151, "Sexual Neurasthenia."

come misleaders, excellence may be perverted into the extreme of criminal cleverness and success.

Epilepsy and Crime.—The tendency of epileptics to do sly and underhand things, to strike and injure, and eventually to do all kinds of acts which in the sense of the law are criminal is well known to those who have studied this strange affection. There are few reformatories which have not some padded cells for epileptic inmates. It has become a well-established practice in some places to segregate epileptics in colonies and villages where they are under proper medical and educational supervision. We may look for the enactment of laws which will make such commitment compulsory without attaching a stigma to the patient. Of course, it will be well to be careful in discrimination, as there have been persons of distinction and fame in history who were sufferers from this treacherous disease. Even in these cases we may find that their career was influenced by the antisocial, self-aggrandizing and even cruel tendencies so characteristic of this affliction. Possibly the greatness of *Napoleon I* (**Case 54**) would not have been tainted by such astounding neglect of the value of human lives had he not been an epileptic. Of the trial of the Camorristi in Italy mention has been made in a previous chapter.

Medical Relief.—These neuropathic conditions call imperatively for the co-operation of the physician in juvenile-court cases. In the matter of pubescent and adolescent perversion, we may have to look not only for psychopathic conditions as such, but for local irritations. Even prepubertal irritation has caused havoc. Sex abnormalities in the male and female child, such as lead to rape and prostitution, have often a back-

ground of neurotic constitution. But there are many minor physical conditions which require attention. Physicians attached to juvenile courts have testified to the fact that medical and surgical treatment and relief have cured many a "criminal." In the appendix of this book contributions from medical experts will elucidate these facts further.

Primitive Types.—The author has shown in various places in this book how much of the tension which leads to antisocial explosions he ascribes to the preservation or reassertion of primitive instincts. If even the adult, as has been shown in the opening paragraphs of this chapter, is subject to these recrudescences of primeval tendencies, the child, who is much closer to the aboriginal mental level, must be admitted to be in still greater danger, under the stress of emotional impulses, especially in the period of adolescence. The valuation of children's acts should be made on the basis of a full knowledge and realization of the facts set forth in the beginning of this chapter, and we should never forget to ask ourselves, in judging of offenders, be they old or young, "What is crime?" Let us also be aware of the fact that moral standards differ with peoples and with historical periods. The attitude of the Greeks toward the sex problem, for instance, was very contrary to the Oriental attitude, and both entirely different from modern conceptions. In certain tribes among the Eskimos it is the filial duty of the eldest son to put his old father to death as soon as the old man is unable to earn his own livelihood; for these tribes have no chance of laying up stores for the non-workers, and it is a tribal necessity to remove the disabled. In many peasant districts of the Old World the old people are obliged, by

the force of tradition and custom, as soon as they reach a certain age, to relinquish their property, their farm, to the oldest son and to retire to a little outhouse (the "Ausgedinge"), where they live under stipulated conditions, but depending much upon the good will of their successor in management. Different social strata have often totally different codes of ethics and moral conceptions, and hardly understand each other's ideas on moral obligations, just as in some Old World countries the inhabitants of neighboring villages fail to understand each other's speech, speaking different dialects. All these things are reflected in the conduct of our children, and may bring them into conflict with established law and order.

Undoubtedly there are individuals who have ferocious and fiendish instincts—the instincts of the destroyer. They are cold and without emotion—the life of a man or his sufferings mean as little to them as the life or sufferings of a beetle mean to the "naughty" boy who pulls out his legs. Here we are again dealing¹ with relics of barbarism, with types of arrested development, in which the primitive instincts still have full sway. Each boy passes through such a period naturally, but during childhood days these instincts rarely lead to terrible results. They are lopped off in the course of mental and physical growth in the child of normal development, under the right environmental and educational influences, with sufficient outdoor and play exercise. Yet stories are told of perfectly normal children, by no means criminals, who acted in a most cruel manner, entirely without self-consciousness, purely in the naïveté and primeval unconcern of childhood.

¹ Cf. p. 174.

Economic Conditions.—Poverty, economic pressure, underfeeding, overwork, lack of play and recreation—of the opportunity to dwell peacefully in that paradise of childhood which is the birthright of every boy and girl—maltreatment, misunderstanding, bad companions, and the other thousand and one causes of waywardness lead more children along the path which ends at the children's court than any other single cause. Many children are habitually hungry and always tired. They lead a slave life before school in the morning and after school in the evening, with scanty meals, much scolding and buffeting, stuffy sleeping-rooms, filth and disorder around them. Many have no home at all. The author knew of a girl (**Case 56**), bright, refined, and artistic in taste, ambitious, whom he had occasion to rescue from the police prison in San Francisco; she had been, with her eighteen years, in fourteen different "charitable" or State institutions, being a homeless waif. One midnight in New York he saw on the steps of an elevated station a little chap of perhaps five years (**Case 57**), fast asleep, dirty, with a bundle of papers tucked under his arms. The tragedies of child life have not been fully told. The cruelty exerted upon the innocents by parents, relatives, employers, exploiters, is hardly understood by the average humane man or woman. Of the subtle sufferings of children in well-to-do homes where there is no spirit of sympathy with real child life nothing need be said here.

Many a home of the poorer classes, where otherwise there would be love and care, is poisoned by economic helplessness. Says John D. Barry, in the *Los Angeles Express* of March 22, 1915:

As a result of a single visitation of sickness many a family finds itself overwhelmingly in debt. The paying of this debt

may take years. During this time the debt may hang over the family like a cloud. And where it does not hang over the family like a cloud it may result in another kind of demoralization, creating the spirit of graft, of advantage-seeking, of weak acceptance of charity and, finally, the expectation of charity. So, often, the degeneracy of a family may be traced to one sickness. As a result of the sickness the members of the family often find that they cannot meet their debts. They feel a deep sense of injustice. Moreover, a few months after the sickness has disappeared it becomes unreal. To pay for that disagreeable experience gradually begins to seem unnecessary. So they forget to pay. Incidentally they learn how easy it is to impose on others, to escape meeting their obligations. For there is nothing in the world more easy to acquire than the spirit of graft, which is in its nature either dishonesty or the preparation for dishonesty.

Again, when it comes to the saving of those juvenile offenders who, for small sins of commission or omission, have landed in the children's court, and who are so little culpable that it would be an injustice to send them to jail, another difficulty arises. Mary R. Fulgate and C. A. Mitchell, of the Social Service Department of the Boys' Court of Chicago, compiled a report submitted by Judge Dolan to Chief Justice Olson a few years ago. This report contains the following significant facts:

Idleness is at the root of most of the mischief, and this is particularly true of the boy brought up among sordid surroundings. . . .

The problem of finding work for the boys has been one of the most difficult. It is easy to get money for the work of the department, but when it comes to a job for the boy willing and anxious to work it is different. Hundreds of letters have been sent out by this department to the large employers of labor asking for work, but less than 5 per cent have responded.

This, the investigators say, is because boys who have been taken to court on any charge whatsoever are con-

sidered "lazy, incompetent, and perhaps criminally inclined. Instead, *the majority are honest and capable*, and enforced idleness is the prime cause of their delinquency. Unemployment is responsible, indirectly, for at least 70 per cent of the offenses charged to boys in this court." Another most instructive statement is made by these investigators which runs counter to the conceptions of many, namely, that habitual indulgence in liquor is negligible and chronic alcoholism is practically unknown. "Of 10,000 cases heard by the court not more than 50 had their inception in minds deranged by liquor." On the other hand, cigarette-smoking is so frequent and pronounced that it has "assumed almost the form of a mania."

An Interesting Bit of Statistics.—Bearing out these various contentions, Doctor Lillian Merrill's findings in the Seattle Juvenile Court show the following causes of delinquency in the cases studied in 1912:

Fifty-two per cent were due to social and economic conditions.

Twenty-nine and five-tenths per cent to physical pathology, including neurotic heredity, sex pathology (including phimosis), adenoids, and enlarged tonsils, malnutrition, cardiopathic conditions, sensory defects, etc.

Eighteen and five-tenths per cent to mental pathology, including moral deficiency, backwardness, epilepsy, and at the end of the line—feeble-mindedness.

The Problem of Truancy.—The reader may remember the mention made of a report on truancy on page 68. It claims that of all the 150 cases studied 43 per cent were actually feeble-minded, and 8 per cent were border-line cases. The author objected at that place to the obviously one-sided method of classification used in that study. In contrast to the report's esti-

mate is the result of an investigation of 100 typical cases of truancy undertaken by James S. Hiatt, Secretary of the Public Education Association of Philadelphia, and published 1915 by the United States Bureau of Education. Mr. Hiatt found only 6 per cent mentally deficient, against 26 per cent backward and 68 per cent normal. He claims that the real cause of chronic truancy is difficult to ascertain. In any case it is probably a complex of causes, no one of which seems paramount. Some of the contributing causes he found to be:

Bad companions.....	20 per cent
Fault of home.....	29 per cent
Dislike of school.....	26 per cent
Desire to work.....	10 per cent
Illness.....	4 per cent
Fault of boy.....	11 per cent

In a number of cases, he says, there seems to be no definite cause except that the child is a "misfit" in the school system. The reader is referred to the initial chapters of this book for an explanation of this really paramount cause.

For too many active boys, representing types to which dry book-lore and memory tasks mean little, the ordinary school is a veritable prison-house. Mr. Hiatt finds 26 per cent to have become truants from dislike of school; the 10 per cent who desired to work may be put down, at least in part, to the same motive; this means about one-third of the entire number. Similar conditions may be expected to prevail in most places. Even when the boys do not play truant they will urge their parents to take them out of school before finishing it. Among them are the over-age pupils, those that

fail of promotion—because their individual needs are not recognized. It is a significant fact that many of them when placed in a truant school are much better satisfied if that school offers outlets for their real needs, as in manual training, outdoor work, gardening, constructive work of all kinds. This is parallel to the well-known observation that gang-rule and gang-viciousness are at once checked as soon as public playgrounds and boys' clubs are established in the congested tenement districts which usually harbor juvenile gangs. As soon as the real boy is appealed to, there is little or no truancy or viciousness.

To those who believe unduly in the gospel of the three R's, Whittier's beautiful poem on "The Barefoot Boy" should be quoted over and over again:¹

"Knowledge never learnt of schools—
Of the wild bee's morning chase,
Of the wild flower's time and place,
Flight of fowl and habitude
Of the tenants of the wood;
How the tortoise bears his shell,
How the woodchuck digs his cell;
And the ground-mole sinks his well;
How the robin feeds her young,
How the oriole's nest is hung;
Where the whitest lilies blow,
Where the freshest berries grow,
Where the ground-nut trails its vine,
Where the wood-grape's clusters shine;
Of the black wasp's cunning way—
Mason of his walls of clay—
And the architectural plans
Of gray hornet artisans!

¹ Cf. also the author's "Some Fundamental Verities in Education," pp. 19 ff.

For, eschewing books and tasks,
Nature answers all he asks;
Hand in hand with her he walks,
Face to face with her he talks,
Part and parcel of her joy—
Blessings on the barefoot boy!"

The two critical ages, when this "Wanderlust" wells up in the normal boy, are from eight to ten years, and at the time of adolescence—both being periods of change and readjustment in the physiological function.¹

That certain classes of defectives are prone to yield to nomadic instincts cannot be denied. This instinct, in some cases, appears as a reverberation of primitive modes of life. The "Wandertrieb" or "Wanderlust" is also characteristic of some psychopathic conditions, such as manifest morbid fears and restlessness, or hyperstimulation of the imagination, or epileptic symptoms. That nomadic promptings also follow attacks of weakening diseases when the desire to work regularly is markedly at low ebb, is known to every physician.

Children's Lies.—The chapter of children's lies and deceptions is a long one, and one which alone would give much food for thought. A child who lies is not necessarily wicked on that account. Even perfectly normal children may lie because they misunderstand a situation; because they are not yet able to distinguish between pictures and reality, or between imagined, or dreamed, happenings and their actual experiences. Often they believe in their own imagined adventures. As the wish is father to the thought, children sometimes

¹ Cf. "The Career of the Child," pp. 96 ff.; p. 275; and Chapter XIX, "Criminality in Children."

state as facts what they had simply hoped would occur. Again there is the powerful dramatic instinct of children and their impulse to act and pose. They wish to produce an effect so as to test their own powers, to experiment upon their elders. Often it is merely their play instinct, a "make-believe" frolic which induces them to "tell tales"; the wise educator will accept these in the spirit in which they are told. There are a hundred and one perfectly normal conditions under which a child will tell what is contemptuously called a lie, and it requires skill and tact on the part of the educator to handle such cases. The child's *motive* must be understood.

Further, there are causes for lying for which parents and educators are almost alone to blame. We make our children tell untruths and practise deceptions for the sake of our own convenience, at the home—when unwelcome visitors come, or in the practice of social pretense—and in many other ways, and then blame them for using the same method against us. Then there is the fear of punishment or misunderstanding. As a matter of fact, this fear in thousands of cases becomes so deep-rooted in a child's soul that it causes life-long unhappiness, or marks the beginning of a life of deception, of resentment, and of antisocial tendencies.

Lies are also the result of physical causes, temporary or chronic. Indigestion, fatigue, nervous exhaustion, and other conditions of this kind, will produce a confusion in the child's mental activity and lead to the making of misstatements.

This argument is not intended to veil the fact that there are constitutional liars. Lying is a symptom of certain psychopathic and "degenerative" conditions

when the normal personality dissolves. It is common with the epileptic degenerate and with the "moral imbecile." There are children who cannot tell the truth, even if they "wanted to." This tendency has nothing whatever to do, in many cases, with intellectual defects. Again, there are otherwise perfectly normal individuals who go through life as successful and pleasant men and women, who have the weakness of prevaricating, of fibbing, of telling stories—and whom no bitter experience will cure of this disorder. The author knows of a lovable man of great ability who is more than naïve in the matter of truthfulness and is rarely aware that he is telling inventions of his own; who even escaped punishment for an actual forgery only because of his winning ways and the fact that he had acted "in good faith," which was recognized by those who had cause to feel aggrieved by his action.

Misconceptions of Normal Conditions.—The misunderstanding of perfectly normal children is responsible for many a derailment in a child's life. If educators will learn to appreciate the order in which instincts and impulses awaken in a child in successive periods; if they will study the budding times of different manifestations; if they will realize that a child is not merely a small man or woman whose standards of conduct must meet those of his elders, but a being different from the adult, passing through mental stages of development, they will judge differently.

The honored judge of the children's court in one of our large cities told the author in confidence that when he was a boy he lived in the toughest part of the town, was a member of the toughest gang of boys, himself the toughest boy of the gang, and every "cop" was

afraid of him. It is for this reason that he is now such a splendid judge of boys. The director of compulsory education in the same city, after twenty years of service, told the author: "Some of the brightest and best young men of this town were the worst scamps I had to deal with when they were boys, and I do not believe it is fair to them to hold their records up against them. I wouldn't give a snap of my finger for a boy that is not chuck-full of life and getting into mischief about all the time."

What, pray, is the difference between the boy who helps himself to his mother's jam from the family cupboard or uses his mother's Chinese vase as a target for his marble practice, and the boy who, after stealing an apple from the grocer's open barrel, or smashing a street lamp, is hauled before the juvenile court? Both are following their primeval instincts. The difference is that the former is a boy taken care of in a good home, and that the other must be satisfied with the street for his playground.

Education plays, of course, a great part in all these things—the *right* education—and many a sin is committed from ignorance and thoughtlessness, from lack of wise guidance.

Weak Wills and Unsocial Instincts.—Undoubtedly we have children with weak wills who will be influenced by bad companions, by bad examples, by a generally bad environment. A weak will is not necessarily a vicious will, nor is it necessarily an evidence of feeble-mindedness. In these cases we must study the social causes with great care. An ounce of prevention is worth a pound of cure, and social reform will do away with many of the temptations and possibilities of crime.

Special care should be taken to give children of this type the right direction in the matter of sport and amusement. Moving pictures can be made to be of great educative value—the ordinary kind which appeals to the sensational is a bad incentive for the indiscriminating child. Weak wills can be strengthened. And if the rotten apple is removed from the barrel it will not cause the others to rot.

Bad habits and loose principles are acquired when there is no incentive for, and no knowledge of, the opposite. From whatever side we approach this problem we find it to be largely an educational one.

Unsocial instincts are often the result of lack of opportunity for social endeavor, or of lack of training of the social instincts. There are many boys who have never been socialized, living in a sordid and disorganized environment in which chance and passion alone reign supreme. Again, there are persons, even children, of so pronounced an individuality that it is difficult for them to fit themselves easily into grooves and conventions. They hate restraint, they hate conventionality and rise against all obstacles that stand in the way of their self-assertion. These must not be confused with the self-centred psychopaths. They are powerful egos, full of life and vigor and initiative. Real or imagined grievances will be resented by them, and they will assert their rights, or what they think are their rights, to the bitter end. Our social conscience is, after all, the product of most recent developments. It was not so long ago when individual honor was supposed to stand much higher than social honor; when individual self-protection came before the protection of the body social. It is a matter of individualism versus society.

A few centuries ago such a man would have been strictly within his legal rights, at least within the limits of the social conscience. The "unwritten law" prevails to this day, and many an avenger of his or her honor has been acquitted by a jury. Duels, "feuds," and "vendettas" are not altogether a thing of the past.

There is a new individualism dawning, which is not antisocial, or asocial, but in which society will find its consummation.

Conclusion.—Juvenile delinquency is caused by many different things. It touches upon the problems of mental and moral defect, of psychopathic conditions, environmental influences, educational organization, etc.

In treating the juvenile offender, the truant, the "in-corrigible," the boy or girl who is hauled before the juvenile court, one must see at once that a thorough knowledge of conditions is required before judgment can be passed. These conditions are physical, psychological, environmental, racial. In a relatively small number of cases we shall find such depravity or abnormality that the decision must lead to permanent segregation and custodial care. We need a new type of officers of the law—experts of child life and child nature. Instead of the ordinary reformatories and penal institutions we should have educational and psychological clinics, medical dispensaries, home schools, forest and farm schools, occupational schools, and children's sanatoria for those children who are in danger of derailment.

The establishment of children's courts, of attendance officers, probation officers, and the method of placing children away from their own environment into good homes, have been only the first steps in the right direction.

CHAPTER XI

SEXUAL PERVERSION AND PROSTITUTION

Prostitution and Feeble-Mindedness.—It has been claimed that a very large percentage of our sexual pervers and prostitutes belongs to the feeble-minded class. Closer investigation has shown that this is not the case. There is, of course, a percentage of feeble-minded among this group of unfortunates, just as there is among the criminals and delinquents, dependants and destitutes. The same causes—lack of proper stimuli, of ability to plan, of forethought, of self-discipline, etc.—which produces the other types of human derelicts, act in this case. But the percentage of mentally defective prostitutes is as small as that of feeble-minded criminals.

Surely, there are silly girls, giddy girls, fond of amusement and dress; there are girls who are “common,” coarse, vulgar, whose habits of conduct lack self-respect and the control of the higher sentiments—who therefore will indulge in the vulgar in sex matters as they do in other things. But the very words “common” and “vulgar” indicate that they represent *a type which was once common*, and that it is only our refined conscience of the twentieth century which rebels against their kind.

There are voluptuous girls and girls in which the sexual instinct is more than normally developed, either on account of a physical abnormality in the sex-organs or in the secondary sexual areas; or through genuine,

general precocity, physical, functional, emotional, and mental.

Even the silliest girl, however, is not an ament, while the precocious boy or girl may be in danger of true psychosis, even dementia. In both instances we are dealing with conditions which can be greatly influenced by environment, training, education, and remedial measures of various sorts, including medical.

The Tragedy of Woman's Life.—A young girl, fun-loving, attracted to the other sex by the natural instinct of the period she is living through, is running a much greater hazard than the male youth of the same period. The young man is usually care-free, and can go on living his own life without encumbrance. But the girl, if motherhood should follow her indiscretion, is at once an outcast, and her fate is beset with many dangers and cares. She is often driven to a life of shame. Law, order, and the social conscience are slowly preparing to meet these emergencies in the spirit of charity and humane understanding. Foundling asylums do not solve the problem. The nearest society has ever come to an appreciation of the conditions involved, is in the care of the so-called war-babies, the birth of which has brought the significance of the problem closer to the individual consciousness.

Puritan self-consciousness and self-righteousness alone cannot relieve the situation, and is not a standard of normality as such.

It is only just to refer, in passing, to the fact that respectable society is honeycombed by similar flaws, and that it does not behoove us to cry out against the mote in our neighbor's eye when the beam in our own is so much in evidence.

Ignorance and Prudishness.—As all sexual perverts, prostitutes, and moral derelicts of the sexual type have once been pupils of our schools, and certainly children in our homes, it behooves us to study the sexual life of our children and to consider the conditions which may lead to derailment.

We may safely say that almost all cases of sexual perversion might be regulated if we could get hold of them at the time of incipency. But only very few parents and teachers know anything at all of the awakening of the sex instinct in their children and pupils; many of them even shun the discussion of this topic as unclean and improper when it is, in reality, perhaps the most vital factor of all education. Neither our habits of living and regulating our lives in general, nor our traditional ways of handling our children take this great factor of life into consideration.

We allow our children to grow up in ignorance of the character and importance of the sexual function and of the hygiene and ethics of the sexual life. Deception on the part of the parents, however, invariably brings about deception on the part of the child.

There are enormous differences in regard to the time when a child matures sexually. Some are erotically developed at five or six, others not before twenty. The erotic always finds opportunity to inform and excite himself, be it from observing the chickens or even the flies, or from playing with other children and with servants. The cold-blooded individual, on the other hand, derives no excitement even from the most detailed sexual explanation.

The lies parents tell about their origin, the avoidance of the topic of human procreation, of the meaning of

marriage and parenthood, the prudishness displayed by morbid minds in the matter of nude art—do not make the children better. On the contrary, this practice makes them curious and suspicious, self-conscious, and secretive; and after discovering the truth, or what they think is the truth, they have lost respect for their parents, who were ashamed of telling them of the very thing that had made them their parents. Thus the sanctity of the marital and parental relation is at once destroyed in their consciousness, and the children become accustomed to look upon the sexual life as unclean and obscene.

Sexual Education vs. Sexual Hygiene.—Sexual education, however, is not identical with the teaching of sexual hygiene. Important as the latter is in a way, it can never take the place of the former, while sexual education may eventually be effective without any scientific knowledge of the hygienic part.

Sexual education is in part a matter of training a child in habits of cleanliness, of physical and mental self-control, of self-respect and self-improvement. It depends upon proper physical training so that the body may be strong, vigorous, and enduring, capable of withstanding physical and emotional strain. “*Mens sana in corpore sano.*” It depends upon the cultivation of the habit of truthfulness and exactitude. Truthfulness in the prompt and unvarnished statements of question and answer in matters where the child wants information, help, and guidance. Truth told by the parent to the child who must have the confidence that he will always have the true answers from his parents to his searching questions as to the origin of things, the origin of his own being. In this manner the parents will fore-

stall the evil thoughts and practices created by unsatisfied curiosity, by erotic imagination, by the obscene suggestions from his companions or from menials.

Truth, yes. But not necessarily the whole truth at once. There are *stages of intellectual growth* in the child to which the answers can be adjusted. And the *truth is not merely a physiological truth*; there is a *spiritual truth*. The sexual life of man is bound up with the highest emotions and ambitions; with the instinct and passion of *love* with all its wonderful tenderness; with the instinct of the reproduction of the self, of a new realization of the self, of a *spiritual no less than a bodily reincarnation*. The sexual instinct has been the basis of the earliest mythologies and religions: *creation*, the polarity of the male and the female element in creation, and the *mystery of procreation*, have inspired the religious thinkers of all times and have given color even to the most spiritual of all religions which recognizes the "fatherhood of God."

As there are stages in the spiritual growth of the child, so there are *stages in the development of his, or her, sex life*. These must be carefully watched. The coming on of *puberty* is fraught with much danger because a profound revolution takes place in body and soul at this time. Now, much intelligent, loving, and tender guidance is needed, so that the "*new birth*" be one for sanity, purity, and constructiveness. *Adolescence* is the period of much derailment. Crime and prostitution have their recruiting stations at this age. The mere teaching of sex hygiene will not prevent derailment through passion; *mere knowledge is not virtue*; fear of consequences is not a safe guide.

Home and Its Influences.—Sexual education is a complex problem. But its basis is a true and sweet home life; the building up of right ideals of living, of a strong and pure character in the children; of right relations between parent and child; infusing the spiritual element into education. Children who respect and honor their parents, having learned from their lips the secret of life, the great divine wonder of procreation, will never look upon the passion of love as an unclean thing, or upon their own origin as an obscene act of which their parents must be ashamed or which justifies the young in following the promptings of lust and voluptuousness.

Marital Choice.—Faulty conceptions of the marital relation in the average home have been responsible for much of sexual tension and unhappiness, with consequent violations of the sacred vow. It is not even now the practice of parents in all cases to let their children do the choosing of their mates. In their fear that the young might choose unwisely—mostly from the point of view of station and wealth, ever so philistinely conceived—many parents insist upon selecting their children's life partners. The ancient custom of the Orientals of selling the bride to the highest bidder is not altogether a thing of the past, and girls are carefully trained to be attractive so that they may bring their price in the market. Princesses marry for "political" reasons and have rarely a love-life of their own. The state of mind in which a girl is when she surrenders herself to her marital purchaser cannot differ essentially from that of the prostitute who sells her body outright. This morally unhealthy condition has not been conducive to fostering a sane and pure sexual attitude.

Promiscuous Relations of Children.—Again, the unregulated relations of children in our homes (often enough rather nomadic in character), in the streets and tenement-houses; their kissing games; their early courtships, often of an outspokenly erotic character; the way in which the young lady of the house receives her young man, with the studied exclusion of the family and of parental influence, are examples of the other extreme, which leads to license instead of freedom, to temptation instead of fortified experience.

Tenement Conditions.—In the crowded homes of the tenements the human derelicts are deprived of that amount of privacy which modern ideas of a clean life require. Those of us who know the unspeakably naïve conceptions and practices which prevail in southern countries of Europe in regard to public “comfort stations”—who know that these things exist openly, even in such civilized countries as Italy and Spain, not to speak of our own southern neighbors—will be charitable in their opinions of the shamelessness and filth existing in our “slum” districts. Nevertheless, it cannot be denied that the close cohabitation of old and young, breeding lack of modesty and privacy, and conducive to reckless exposure and filth, will stunt the sensibilities of the young and lead to loose ideas and habits of personal morality. Unclean habits and shamelessness nurture prostitution and crime.

Morbid Sexuality.—The development of the sexual impulse should be watched with solicitude. Through local or neurotic irritation, or through maladjustment of the growth factors, a distinct sensuality may be caused, with sexual precocity, a premature awakening of the sexual impulse in both boys and girls. Often the

body is not strong enough to resist the onslaught of these powerful instincts in their budding time, when they are rushing forth with elemental force, and are least understood by the child; more often the will is not ethically developed for successful inhibition of unhealthy promptings, and the nervous system is still too unsettled to withstand the strain.¹ The result is a general havoc and shipwreck. In adolescent girls disturbance in the menstrual rhythm produces irritations and excitations leading to moral and nervous breakdown. This is the typical period of *masturbation*, although masturbating tendencies have been observed in very young children.

The effect of masturbation on the system has often been overestimated and parents have been needlessly frightened. Nevertheless, we must be watchful and cautious, as prolonged or excessive indulgence in this habit is distinctly harmful to the functional and mental life of the individual.

Masturbation is often caused by those sedentary habits promoted by our present methods of classroom instruction with books. The nervous wriggling of a child in his seat, especially when the seat is not properly adjusted, is very often a danger-signal.

Masturbation is not always a sexual act in the sense that the masturbator thinks of the opposite sex. There are cases of *inversion* when the sexual impulse is abnormally directed toward the masturbator's own sex. The act is often merely the gratification of a local irritation, as in the condition mentioned in the preceding paragraph; or it is the result of a desire to get rid of an un-

¹ Cf. Hall's remarks, quoted on p. 137. Also "Sexual Neurasthenia," p. 151.

pleasant and exciting sensation. Anxieties, fears, expectations of pleasurable or unpleasurable kind, may lead to the setting free of the masturbating impulse or even to an excitation of a true sexual impulse. This sexual impulse cannot be gratified in the normal way by sexual intercourse in immature children, or even in adolescents of the domesticated and "moral" type, and therefore leads to artificial gratification, which means onanism or masturbation. It has been established beyond doubt that the overwhelming majority of boys masturbate at some time or another, in many cases keeping up the practice through life, even after marriage, in preference to intercourse with prostitutes. The percentage of masturbating girls seems to be smaller, although it is difficult to obtain absolute figures. Girls, however, masturbate more frequently and often with greater intensity than boys.

Early Intercourse.—The sexual impulse, when not normally gratified, may have grave pathological effects in the physical as well as in the psychical sphere. *Early marriages* should therefore be considered with favor, at least in respect to those whose sexual life awakens early and is strong in passion. Many children of sexual precocity are tempted to gratify their promptings by early intercourse. It has been established in the Chicago Domestic Relations Court by very careful investigations into the causes of prostitution that a surprisingly large percentage of girls had their first "fall" in the home of their parents.¹ We may be reminded that in certain

¹ "You can imagine my astonishment when on compiling my social statistics for the last six months of the first year's work, I discovered that the girl's own home, under her father's own roof, was three times as great as any other factor. Out of a total of 225 cases listed this place was 63; out-of-doors, 21; assignation houses, 16; man's home, 19; place of

peasant districts in Europe it is almost a legitimate privilege of the lover to visit his sweetheart nights in her own chamber. The sexual relations are not always and everywhere carefully circumscribed but more or less in the open and promiscuous. What has been said in the beginning of this chapter about "common" and "vulgar" practices may well be remembered here. Those who know the intimate history of the royal courts of the Middle Ages are aware of the fact that in those "highest circles" the relations between knights and ladies were anything but platonic; our modern standards represent almost a different civilization.

Ancient Sex-Worship.—Here we touch upon another element which deserves attention in our endeavor to understand and handle this difficult problem. The problem of prostitution, and for that matter also that of *inebriety*, which is often co-ordinated with the manifestations of the sexual instinct, must be, at least in part, considered in the light of manifestations of primitive instincts and aboriginal mental attitudes. Sex-worship and revelry formed important elements in ancient religions. The sacrifice of virginity was as much a religious act as offering one's self-control at the altar of Bacchus.¹ Prostitution was an act of service

girl's employment, 9; place of man's employment, 6, etc., etc., demonstrating another fact that these girls' falls were due in some measure to acts of omission on the part of parents: neglect, criminal neglect."—From a paper by Judge Goodnow.

¹ Intoxication, according to *Doctor G. E. Partridge*, was originally an accompaniment and the source of those exalted psychical states necessary for the development of individual and racial consciousness, which meant enlarged mental horizon and the lifting of individuals and nations to levels of constructive mental activity. In time the race acquired the fixation of these levels, and the intoxication impulse had served its usefulness.

"The impulse survives to-day in its harmful aspects," says the *New*

in the temples of Astarte and Venus. We are dealing, in a measure, in our modern problems, with reverberations of primordial conceptions and impulses. Modesty, in the modern sense, did not exist in those times and peoples. It is, of course, very difficult to project our modern consciousness, our modern ideas of right and wrong, of virtue and vice, onto the level of these primitive instincts and mental attitudes. There is hardly a bridge leading from one to the other. Yet, in judging of individuals, we must bear in mind the experience and evolution of the race. Chapter III on "Different Civilization Levels in Modern Society" gives further enlightenment on this subject.

Racial Differences and Their Modern Counterparts.—An example of how moral conceptions differ racially, or in different civilization levels, is contained in Miss Blascoer's report on colored children in New York (quoted before). She writes:

York Medical Journal in reviewing Doctor Partridge's book, "Studies in the Psychology of Intemperance," and continues: "It no longer has a great function to perform. It dominates individuals and social groups when they are unable to reach these higher levels of activity, to direct their vital energies into these channels, and so are dependent upon its temporary and inefficient exhilaration. They find in it also a social reaction, likewise inadequate and evanescent, but a feeble survival of the effective social awakening that intoxication produced in the early history of mankind. The narcosis of alcohol or other drugs is now merely a refuge for those whose mental organization demands release from the too great pressure which they are unable to meet in the ceaseless struggle for existence and advance, the unequal struggle between instinctive forces and ethical conditions." This is true to some extent, but there are other factors entering into a discussion of this problem.

According to Doctor Partridge, the cure for habitual intoxication must consist in directing the activities of the sufferer to higher spheres, which must be such as are capable of arousing an interest sufficient to stimulate and sustain him in his best endeavor.

(Case 58.) A curious family arrangement was found in the case of one of the children in the exceptional group. A boy, *E. S.*, 9 years 9 months old, in the 4B grade, was kept out of school because he had no shoes. On visiting the home address given in the school it was found that he and his sister were being given their meals there by their father's wife, but slept in the home of their mother, who was never married and who had had two other children by other fathers. The father was in the West, employed in a large hotel, and had sent no money for the maintenance of the boy and his sister for six weeks. Mrs. S. was very ill, with what proved later to be pernicious anæmia, and could not earn enough money to care for the children. After much persuasion she permitted the matter to be placed in the hands of the Charity Organization Society, whose efforts brought a substantial response from the husband. She refused, however, to permit application to be made for the commitment of the children. She was a refined, intelligent woman, a West Indian of French descent, and said she wished the children to be in their mother's custody if she herself was no longer well enough to care for them. When asked whether she thought it was doing justice to the children to have them brought up by a woman of loose morals, she said: "I should not regard Miss H. (their mother) as a woman of loose morals. She is and always has been a very hard-working young woman, and if I make myself content with these arrangements, I cannot see why the public should feel concerned."

Examples of this kind can be multiplied by those who know the situation. But we should be far from correct if we were to persuade ourselves to think that conceptions like these are confined to "lower" races or civilization levels. The author knows of another case where a "curious" crosswise arrangement was carried out quite in legal form. The parents of a certain boy (Case 59) had obtained a divorce and each one had remarried. The father, Mr. A., married Mrs. B., the divorced wife of his friend, Mr. B., who in turn married Mrs. A., the

divorced wife of the boy's father. Mr. A. kept his boy to live with him and his new wife, the former Mrs. B., who kept her little daughter from her former marriage with her. Mr. A.'s little daughter, the boy's sister, stayed with his and her mother, the new Mrs. B. and former Mrs. A. The children visited the new homes of their respective mothers or fathers at stated intervals, and the families remained friendly with one another. New children were born to either couple, thus complicating the family relations. Similar occurrences are recorded in the journals of the courts of all cities. Everything is perfectly legal and the charge of "loose morals" as made against the poor colored woman, cannot even be breathed against these wealthy and highly refined people, who feel that they are perfectly within their rights.

Malpractice with Children.—Even in the case of early malpractice with children, parallels with primeval conceptions may be drawn. In his book, "*Das Geschlechtsleben in der Völkerpsychologie*" ("*The Sexual Life in Folk Psychology*"), Leipzig, 1908, page 557, Otto Stoll reports cases from uncivilized countries; and to his account of the defloration of children he adds this statement: "From all such details we draw the ethnologically remarkable inference that those human beings who have attained the highest level of civilization relapse frequently, in the matter of sexual life, into the rudest instincts of savagery; and that in this respect neither does one civilized country much excel another, nor is 'civilized man' in a position to cast many reproaches in the teeth of the savage." (Quoted by Moll.)

Malpractice on children is of course one of the most potent causes of eventual prostitution, as it awakens the sexual instinct prematurely and destroys the safe-

guard of the sense of shame, at the same time disorganizing the psychic life of the child among many other lines of volitional and ideistic elements. How serious this matter is may be gauged from the fact that defloration has taken place in girls as young as nine or ten years. There have been mothers of eleven and twelve years. If these matters are brought into court more damage is often done by having the children present in open court during the time testimony is given, thus exposing them to the relation of immoral details.

As Moll says in his very instructive book, "The Sexual Life of the Child," page 231:

The mental condition of the child-depraver is a matter of the utmost importance. In cases in which we find that the offender is suffering from some pronounced mental disorder, such as progressive paralysis (paralysis dementia), senile dementia, or an epileptic disturbance of consciousness, there can be no doubt as to the existence of irresponsibility; but it must never be forgotten that in the early course of such diseases these sexual perversions often make their appearance at a time when no other definite signs of the brain disease have as yet appeared, and that for this reason the conviction of innocent persons—old men, for instance—on account of sexual offenses against children often occurs. Kirn, who in the Freiburg prison had under observation six old men at ages from 68 to 81, all convicted for sexual offenses against little girls, states that in all of these there were intellectual defects, and in several of them pronounced symptoms of senile dementia. The psychiatric expert must examine all such cases with the utmost care. We may also express a wish that judges were not inclined to regard themselves as experts in this field, of which, as a rule, they have no expert knowledge whatever.

This last caution is well put in regard to many cases of sexual perversity and prostitution, even of crime and delinquency in general.

Causes and Remedies.—Abraham Flexner, in his study of "Prostitution in Europe," published under the auspices of the Bureau of Social Hygiene, by the Century Company, New York, says:

In so far as prostitution is the outcome of ignorance, laws and police are powerless; only knowledge will aid. In so far as prostitution is the outcome of mental or moral defect, laws and police are powerless; only the intelligent guardianship of the State will avail. In so far as prostitution is the outcome of natural impulses denied a legitimate expression, only a rationalized social life will really forestall it. In so far as prostitution is due to alcohol, to illegitimacy, to broken homes, to bad homes, to low wages, to wretched industrial conditions—to any or all of the particular phenomena respecting which the modern conscience is becoming sensitive—only a transformation wrought by education, religion, science, sanitation, enlightened and far-reaching statesmanship, can effect a cure.

Illegitimate Offspring.—In a letter to the author, B. S. Steadwell, president of the World's Purity Federation, made the following interesting statement:

Of course, very few prostitutes have any offspring. The mothers of most children born out of wedlock are not prostitutes by any means; they are in the main unfortunate and betrayed girls. The fathers of such children are largely libertines, to be sure, but even this hereditary influence is not sufficient to "doom them to perdition." I have had an opportunity to study many of these children during the past eighteen years, and I have been much surprised to find them in the main evenly balanced and healthy, beyond the average child born in the home. We have found, too, that these young mothers have had an easier time during confinement than the average wife.

These statements are most instructive. They show that the protection of law and custom is not as strong as it might have been thought to be. Physiologically

speaking, the illegitimate mother and the illegitimate child are superior to those who have the sanction of church and state. This is a curious, perhaps disquieting example of the supremacy of the natural, God-given instinct as compared with man-made standards. For these mothers, and in many instances the fathers, too, yielded to the primordial instinct of love, without thinking of the opinion of the "world," of conventional standards, and of organized society. This is, perhaps, unfortunate, and certainly has its drawbacks. Besides, it would be a wrong conclusion to deduct from these facts a justification of what has been called "free love." But it does signify that man has hedged himself in unduly with conventions—has fettered himself as if in fear of his own legitimate and natural promptings. These social chains, partly forged under economic pressure, have weakened his physiological constitution to some extent. It will be well to consider the necessity of re-establishing a more natural basis for marital relations than has obtained for a long time under modern conditions of life.

Conclusion.—It is obvious that an unguarded sexual life may lead a child, boy or girl, to failure in school and home. The child may suffer from nervous breakdown, from backwardness, from "incurability," and eventually land in the reform school, the "street," the jail. The problem of sexual health is, therefore, one which gravely concerns educators and which should be considered in all its aspects and in all efforts to improve educational conditions through clinical research.

But we must be clear in our minds about this: the problem we have discussed in this chapter is one that cannot be solved by milk-and-water methods; by allow-

ing prejudices and prudishness to dictate our measures; by letting emasculated men and good old ladies who have passed the critical age formulate ascetic rules of conduct. It is a problem of warm-bloodedness, of virility, of deep-rooted legitimate instincts—instincts which guarantee the power and permanency of human civilization. It cannot be solved by denying love and procreation their full right of self-assertion, by insisting on puritanical doctrines of the mortification of the flesh, by hysterical tirades about “white slavery” and by crusades against the “social evil.” It requires a sane and scientific appreciation of facts; a calm and conservative study of conditions; and a sympathetic and humane attitude toward those unfortunates who are now treated as outcasts and who are, most of them, merely human.

PART II

THE PROBLEM OF CLINICAL RESEARCH AND DIAGNOSIS

CHAPTER XII

THE DETERMINATION OF EXCEPTIONAL DEVELOPMENT IN CHILDREN

Different Methods of Testing.—How different methods of testing will affect the findings, especially when there is obscurity in terminology, may be shown by many instances. This cause alone has been responsible for the many erroneous ideas about the percentage of feeble-mindedness and mental defect in the commonwealth; about the danger that our race may be degenerating; about eugenics and marriage and a host of other things. To illustrate:

Some investigators have placed the number of distinctly feeble-minded persons as amounting to 2 and more per cent of the entire population; while other investigators, in other places, using different scales of measurement, have found considerably smaller percentages. In Raleigh, S. C., the number of feeble-minded children was estimated as 28 out of 3,800, or about 0.7 per cent. In England and Wales the proportion of feeble-minded to the normal is 1 to 248, or about 0.4 per cent. On Ellis Island, where the medical examiners introduced some interesting methods of rapid testing of

immigrants suspected of mental defect, it has been shown that not more than 0.2 per cent can be called feeble-minded. In the July number (1917) of *Mental Hygiene*, Edith M. Furbush, statistician for the National Committee for Mental Hygiene, gives figures which are equally reassuring. The census of January, 1917, shows a total of 37,220 feeble-minded persons in institutions throughout the country. The epileptics enumerated, which now come under the mentally defective class, totalled 10,801. In 1910 the Federal Census Bureau estimated that not over one-tenth of the feeble-minded were being cared for in institutions. On the same basis, the article says, and assuming that increase in feeble-minded has been at the same rate as the general population, there is now about one-sixth of the total feeble-minded population in institutions. This would mean that there are 223,320 feeble-minded people in the United States. If the total population of the country is estimated as something above one hundred millions, Miss Furbush's figures would mean that the percentage of feeble-minded is as low as one-fifth of 1 per cent—a peculiar coincidence with the Ellis Island figures.

Hereditary and Congenital Data.—In any system of tests that is to give reliable data, the *causes* of mental exceptionality must be discovered as far as possible. The greatest difficulty will be encountered in the study of hereditary and congenital causes, including venereal infection. Family data are not easily obtained. The heredity charts made up in some places endeavoring to trace the members of certain families through generations and centuries, are of doubtful value, inasmuch as the valuation of the moral conduct and mentality of individual members is rarely scientifically reliable. It

is difficult enough to diagnose justly the case of a living child; to classify with any degree of justice and accuracy the cases of the dead, through "field work" which relies upon circumstantial evidence, is a risky undertaking.

Family data will never be trustworthy until we have a national system of *vital statistics*. Careful records of births and deaths and the accompanying circumstances should be kept, including as much of the parental history as possible. These data should be accessible for the scientific study of every individual child. The medical fraternity can greatly help these studies by establishing to the best of their opportunity the history and etiology of each case under observation, and by carefully studying hereditary and congenital causes. Professional discretion will prevent physicians from making the facts thus discovered public. But it seems justifiable to expect their co-operation, by legal provision and sanction if necessary, at least in cases of such gravity that the State and the community have a deep interest. A *commission* composed of experts should be created in every state or community, with full power to elicit all the obtainable information on any case.

Mental Status of the Child.—A mere "scale of intelligence," so-called, as for instance the Binet scale, can never give a valid measure of a child's status. There must be a thorough study of a child's history, environmental and physical; there must be an understanding of his heredity, his education, and a number of other points. It is therefore refreshing to read Doctor Merrill's sentence:¹ "Any system of tests by which alone it is

¹ In the report on the findings at the Seattle, Wash., Juvenile Court, quoted before.

attempted to classify the child as being of a given mental age involves the fallacy of pseudo-exactness and needs carefully to be avoided."

The Author's Own Larger System of Tests.—In his book, "The Study of Individual Children," published 1912 by the National Association for the Study and Education of Exceptional Children, the author has ventured to offer a set of tests and investigations which, while by no means final, may illustrate what ought to be done. The complete form comprises the following schedules:

First: a *Child History*, giving data previous to the time of examination. Second: a set of *Body Measurements*. Third: a system of *Medical and Functional Examinations*. Finally: a scale of *Physiopsychological and Mental Measurements* which, in conjunction with the other investigations, will allow of some sort of definite conclusion as to diagnosis and treatment.

Child History Data.—This part of the investigation endeavors to obtain as full *etiological statements* as can be obtained, referring to the family history of the case: Parents' and grandparents' station in life, physical and mental condition, cause of death, temperament, etc. A careful record of all children, living or dead (including miscarriages and still-births) is required. Information is also asked about other relatives. The *child's own history* refers to data about early infancy, nature of feeding, diseases, developmental data, etc. Then comes a *description of the child*. First, *Physical Data* are asked: Height and weight, condition of teeth, body peculiarities, etc. Second, *Functions*: Digestion, sleep, sense reactions, speech, etc. Third, *Moral Status*: Sexual development, filial relations, obedience, character in gen-

eral and detail, etc. Fourth, *Peculiarities and Habits*: Conditions of fear, nervous conditions, general reactions, manners, etc. Fifth, *Mental Status*: Precocity or backwardness, memory power, thought, imagination, judgment, school training, etc. Finally, *General Symptoms*: Errors of education, medical treatment, etc.

Body Measurements.—These are of the usual anthropometric type, including height and weight, chest expansion, girths, and diameters. Data on the child's individual rate of pulse, respiration, and temperature are added, to enable clearer judgment in the case of illness. The blank for these measurements is so arranged that monthly entries may be made for one year. The blank is for the use under conditions where longer periods of observation are granted so that the growth of the child and his development may be carefully studied. The measurements are supposed to be made without clothing not only to exclude the inevitable errors which clothing involves, but also to give immediate opportunity for closer physical observation, preceding a thorough medical examination. Facts of scoliosis, round-shoulderedness, skin abnormalities, deformities, flat-footedness, burns and scalds, etc., etc., can thus be at once put down. On the back of the entry blank, space is provided for such remarks which then can be utilized as a basis for further medical reference.

Medical Examinations.—For these several different blanks have been provided, representing different stages and lines of observation and examination.

The first of these is in the nature of a *cross-section examination*, to be made by the regular school physician, giving a general clinical picture of the child's physical condition. It refers to the general appearance and

nutrition of the child, and to simple facts about head, eyes, ears, nose, mouth, tonsils, and pharynx, neck and glands, chest, spine, abdomen, genitals, extremities, etc.

The succeeding blanks require the co-operation of specialists and suggest such *particular laboratory tests* as will make the examination comprehensive.

There are two *anatomical sets*. The first refers to the condition of the *skeleton*. It includes skull measurements, X-ray photographs of the carpal bones, etc. In regard to the significance of the development of the carpal bones, the late Doctor Thomas M. Rotch, of Boston, in his monograph, "The Development of the Bones in Early Life," came to the following conclusions:

1. There is a manifest need for some developmental index by which physicians, acting as an advisory council to the people, shall be able to determine the fitness for school and for physical work of the early years of life.

2. The former means for this purpose are inadequate, whether by height, weight, teeth, statements of parents and guardians, or birth certificates.

3. The physiologic test by the pubic hair worked out by Crampton¹ is an exceedingly valuable contribution, and if, as is possible, it correlates with a more practical anatomic index, will aid in deciding in doubtful cases. It evidently, however, is not from its very nature a test which should be widely used in schools, or courts; and it only covers a comparatively short period of life and is one which is not applicable to many questions connected with early and middle school life.

4. Physiologic conditions will probably be found to correspond to anatomic, and great credit should be awarded to Crampton for his suggestions and work directed to the future discarding of chronological age as the most important guide in solving the problems of early life.

¹ Cf. later.

5. Weight and height have long been known to be very inadequate for determining chronological age, and have been conclusively shown to be so by Crampton.

6. Pryor has shown conclusively, and my observations uphold his, that there is a marked difference in the anatomic development of children according to sex and family.

7. The consensus of opinion among odontologists is that the eruption of the teeth as an index of age is illusive and very unreliable.

8. The skeleton represents an illustrative steel framework of development on which the body is built, and this development, when determined, presents the best source from which to evolve an anatomic index for practical use in the safeguarding of early life.

9. The most important part of the skeleton for use as an index lies in the joints. . . .

11. The carpal bones and the lower epiphyses of the radius and ulna represent the other joints to such a degree in so many instances, are so much more in evidence, and are so readily interpreted by the Roentgen method, that they can be practically used as an index of development, representing the entire bony framework.

The second anatomical set refers to *musculature and characteristics*. It relates to a study of the peculiarities of the face in all its details, including symmetry and asymmetry, nose, mouth, ears, eyes, forehead, skin, in their anatomical meaning. Further, the mammæ, abdomen, genital organs, etc. With Crampton (*cf.* his publications as contained in bibliography at end of this book) the author lays great stress upon an investigation of the anatomy (and functioning) of the sexual organs. Referring to his remarks in various places in the chapters on delinquency and prostitution, he wishes to emphasize the fact that malformations, tardiness or precocity of development, disturbances in the functional

sphere of the reproductive apparatus are responsible for much mental and moral disorder.

A third set of medical test-cards presents *functional tests*. They include tests of the special senses (vision, hearing, taste, smell, touch, temperature, muscular sense, balance), some of them partly anticipated in the physiopsychological tests (which are mentioned later, but may be taken up before a child is referred to specialists for more thoroughgoing investigation); power of localization; chorea tests, knee-jerk, habit spasms, neuroses, speech, dexterity, gait, appetite, digestion, heart action, lungs, urination, etc. Special reactions are also provided for.

For institutional or prolonged observational work blanks have been provided for records of special *regimen and diet*, as well as a *disease and treatment record*.

Educational Tests.—In the working out of those tests which are intended to probe the *mental reaction* of the child, a distinction is made between *intelligence and judgment tests* proper, and those which refer to *physiopsychological reaction*. For example, the *recognition and naming of colors* are not in themselves tests of intelligence; they depend upon the physiological ability to distinguish color, and the ability to attach a name to a clearly differentiated color. A color-blind child will neither match nor name colors correctly, no matter how intelligent he may be. Again, the visual and aural memory span is of great importance, but it does not in itself vouch for intellectual strength.

Physiopsychological Tests.—They present tests in color-perception and naming; visual and auditory distance and accuracy; visual and aural memory; recognition and identification of tones and harmonies; tactile tests; tests for acuteness in taste and smell; exercises in

location and balance, etc. All these tests are carefully graduated.

Mental Tests.—The mental tests proper are quite variegated. They include exercises in counting and naming things; language exercises, also using secret languages; following of directions; mental association; judgment; motor co-ordination; expression, and certain æsthetic reactions intended also to reveal emotional qualities. These tests are very full indeed, offering a large number of special exercises, such as building and manual construction, drawing, painting, and modelling. There are also such tests as will examine a child's progress in reading, writing, composition, and number. His power of classification, of comparison, of deduction is under fire, and altogether there is such a composite picture of his mentality produced that hardly any one of his faculties escapes testing.

Arrangement in Periods.—The anatomical, functional, physiopsychological, and mental lines of development depend upon certain *biological factors of growth*. These have been reflected in the history of race development. As has been shown in previous chapters, it will be impossible to draw clear lines of demarcation between the chronological years of a child's age as to his mental standard, inasmuch as the anatomical, physiological, psychological, and mental growths do not run in parallel lines, or at equal rates of speed, in all individuals. But it is feasible to mark off, in a general way, certain *periods of development* in a child's life, such as correspond broadly with the *periods of race development*, by way of a succession of ascending instincts and mental attitudes, in rate of reaction, in the matter of motor co-ordination and response, etc.

In the author's three books treating of this subject¹ he has distinguished four such periods. As will be seen on page 41 of this volume, he has modified this division by splitting up the first of these into two. Thus he suggests five periods: the *Infancy Period* (from birth to 2 or 3 years), the *Primary Period* (2 or 3 to about 6 or 7), the *Elementary Period* (to about 11), the *Intermediate Period* (12 to 15), and the *Advanced Period* (16 to 21). These are further described on pp. 42 ff., and referred to frequently, so that it would seem the author's meaning cannot be mistaken. On page 167 reference is also made to Mr. Ellis's divisions. His two Childhood Periods cover about the same years as the author's Elementary Period; his Preadolescence corresponds to the Intermediate; his Early and Later Adolescence are somewhat parallel to the Advanced Period. There is no objection whatever to modifications of the division, and to appellations which indicate developmental periods from the point of view of sexual evolution; the principle is the same.

The important point is that the author has endeavored to adjust his tests to these periods. He is fully aware of the fact, however, that even here the lines cannot be drawn hard and fast. Besides, as shown before, an individual child may pass through these periods normally in certain lines of development, and unusually, or even abnormally, slow or fast, in others. Parallel development along all lines, and at the same rate of speed, is really an exception. This explains the difference of mental type. The different mental activities are somewhat independent of one another, being local-

¹ "The Career of the Child," "Some Fundamental Verities in Education," and "The Study of Individual Children."

ized in different brain areas. Again, there may be and often is a distinct difference in the physiological growth rate from the rate of intellectual development. The one or the other may be retarded or accelerated, causing tension. Similar discrepancies may appear between the anatomical and the psychological development. Thus, the deductions to be made from the results of the tests have to be carefully checked up and adjusted.

Conditions of Testing.—The objection may be sustained that such an extensive examination is impossible in general practice. As a matter of fact, this series is not intended for such purpose. In Chapter XVI of this book the author offers a more condensed set of tests for clinical use. But no rapid examination can be thorough and reliable; it tends toward fallacious deductions. Even the strictest adherents of the Binet scale have been adding medical examinations and many other data to the scheme, and many Binet examiners have amplified the system itself by the introduction of further tests. One of the most ardent students of the Binet scale¹ assured the author that he considered it a grave error on the part of physicians, especially neurologists, to have fallen into the habit of using these tests in a rapid office examination of children for the determination of their mental status. As has been stated before, even when a child falls three or more years below his chronological age—a condition which some think gives the Binet tests a chance of value—it has been found in numerous instances that the conclusion of intellectual inferiority is not always tenable, inasmuch as the child's opportunity for training has to be considered; and the kind of tests used, or passed, or missed, must be taken

¹ Professor Terman of Leland Stanford University.

into account, so that we may not have a warped picture of his mentality. Besides, a child's chronological age, it has been shown, is no index of his development.

An investigation like the one suggested in this chapter will obviously extend over some period of time, and cannot be completed in one sitting. Only so much should be done in one examination as can be accomplished without straining the child. Measurements and medical examinations have to be undertaken under proper conditions.

In courts the *detention home* should be developed into an *observation clinic*, where tests and examinations can be made at leisure and under easily controlled conditions. An *observation clinic*, or *observation school*, equipped with the proper apparatus and under the direction of specially trained persons, should be established in connection with every school system. *Truant schools* and similar institutions should afford ample opportunities. Many of the children needing examination and observation would not have to be altogether removed from their ordinary surroundings if there is a system of clinics for the special work. Much of the testing can be done in the school itself, in the schoolroom, upon a group of children at the same time. Many of the tests are so arranged that they can be made part of the *actual schoolroom work*. In a measure they may be utilized in place of the traditional *examinations*, to determine a pupil's maturity for promotion. Other tests are of such a nature that they can be done in *rest and recreation periods*, appealing to the children's play spirit; or in the workshop, the school-garden, etc.

In special institutions for the study and training of

exceptional children, the opportunities are, of course, unlimited.

Instructive Cases.—To illustrate a few of the points made in this chapter, also on previous pages of the book, several cases from the records of the author may here be briefly reported, omitting a mass of details which are on file. The first two cases were referred to the author by the Juvenile Court of San Francisco, in 1913, and examined by him in the clinic established in that city by the National Association for the Study and Education of Exceptional Children, with the assistance of Doctor Ernest Bryant Hoag. The tests were abbreviated in their cases, but followed the general lines of this system.

Case 60, F. C., boy, aged 15 years.—Reported because he was unable to retain a job, and had become practically a vagrant. The mental tests proved him to be intellectually very immature, generally representing the primary level, and certainly grossly unschooled. His physical condition showed the underlying causes of much of his difficulty. He should have had special treatment for many years past. Septum deflected on right side of nose, with great obstruction to breathing; nasal catarrh. This constituted so constant an irritation that it required immediate surgical relief. Hearing was reduced by two-thirds in right ear, with occasional discharge, indicating otitis media and calling for treatment to prevent further deafness. The boy proved to be an epileptic, with attacks dating back at least two years. On the basis of these findings the following report was sent to the court: "The boy is unable to undertake independent employment. Should have surgical relief and be placed in a home for epileptics, where also his manual faculties may be developed. He is entirely unfit for education in the public schools."

Case 61, J. F., boy, aged 16 years.—Had been arrested for repeatedly attacking his father, even his mother, and not doing well at anything. When brought to clinic, he was handcuffed,

sullen. His mental development was found to be exceedingly uneven. He showed much power of rational judgment, together with singular retardation in specific applications. He gave the impression of a mentally neglected child. He represented a transition period from childhood to adolescence, with all the mental disturbance characteristic of that epoch. Emotionally he was under a distinct strain, being sullen and antagonistic under unsympathetic influences such as his home presented; but yielding immediately to personal sympathy. He was hardly mature or trained enough for independent work. The medical examination revealed catarrh of the throat, enlarged turbinates which obstructed the nasal passages, and a long, adherent prepuce. Nasal treatment and circumcision were indicated for immediate relief, and it was suggested that he be placed away from home somewhere where he would have firm but kind discipline and special training without stigma.

His case suggests the fact that it is easier to make recommendations than to have them carried out. At the present time there are hardly any places in existence, under public control at least, which would have given this boy a chance. Reformatories, so-called parental schools, and the like, as they are now conceived and organized, are not the places required in such a case.

The following cases have been under observation in the east, in part in the institution for atypical children, Herbart Hall, at "Watchung Crest," Plainfield, N. J.

Case 62, G. S., boy, aged 15 years at time of complete examination. Parentage very good, easy circumstances. Father is quite deaf from catarrh of long standing, also exceedingly nervous, and G. is strikingly like him. He was the fourth child among seven, three of whom are dead. Prenatal conditions very favorable, but child was wakeful and nervous from first breath and wore his mother and competent nurses out completely. At 2 had a bad fall which caused two collapses; lived only on account of stimulants being administered. After that

time he was a bad stammerer. Very left-handed. Morbidly afraid of fire—generally morbid symptoms of fear; also brooding and melancholic about his own condition. Backward in school. Given to tempers. Diminutive in size for his age, and sexually underdeveloped. Very defective eyesight, through muscular insufficiency. Readily fatigued. He had no visual perspective, owing to his defect. His visual and aural memory span was limited.

A year after first reported, had improved splendidly under training, in every direction. He had acquired considerable ability to concentrate and to endure, also to control his speech defect and morbid traits. His backwardness had been overcome to a large degree since his difficulty was understood, and he was bright and responsive, eager to progress. Organized manual work, especially work on a large scale outdoors, helped him to acquire muscular control and to improve generally in physiologic function. In contrast to this he developed manual dexterity with a distinctly artistic touch in producing small and minutely executed models of houses, boxes, picture-frames, etc., also in drawing.

After two years he left Herbart Hall. When he reached home (he had not been seen by his relatives for the entire period) his mother wrote that she was amazed at the change which had come over the boy. "When he entered your school he was melancholy and backward and with a poorly developed body. And now he is happy and brimming over with ambition in every direction."

Case 63, R. F., boy, aged 17 years.—Of good appearance, above average in size; good conversationalist and apparently intelligent, with ability to do a number of ordinary things. The son of wealthy parents, he had never done well, had no great filial affection, and had recently drifted into bad habits, undesirable companionship, even delinquency. The medical examination was largely negative, except that circumcision was strongly indicated to correct preputial hypertrophy and his bad sexual habits. The mental tests revealed some of the causes of his somewhat shiftless and dangerous life. Visual and aural memory very poor; what was retained was not in proper order. Muscular memory unreliable, sense of balance impaired. Reproduction of oral information only fair. The judgment

tests showed distinct weaknesses; where he succeeded he needed much time and the opportunity of a second and third attempt. His methods in manual and art expression were distinctly primitive. In language he was quite proficient and could talk very intelligently; yet, when he was to formulate his thought in writing he was vague and loose in construction. It was plain that this boy, having grown up without the proper recognition of the special training he needed, could profit little from ordinary school instruction and influences. When let loose he had no perspective of situations and causal relations and could not learn quickly enough from experience, owing partly to his unreliable memory. He had, however, sufficient intelligence at bottom to be helped toward considerable improvement through a kind of training which took his needs of organization of his mental outfit into consideration. The atmosphere of his surroundings counted a great deal. He became a very tractable and very much better boy, and had good prospects of a brighter future if he could have been long enough under the reconstructive influences.

Case 64, L. D., boy, aged 17½ years.—His mother suffered from shock in the sixth or seventh month of pregnancy, owing to father's sudden death. One aunt, very nervous temperament, asthmatic, died of Bright's disease. Language developed slowly and indistinctly after 2 years of age. At 16 was circumcised; much excited over operation and nearly died from heart failure during anæsthesia. When a little boy, was frightened by a horse running after him; fell and broke his arm. Used to be morbidly interested in funerals; talks about the coffin he wants to be buried in. Barely escaped being placed in an institution for the feeble-minded. He had been unmanageable, inefficient, morbid, with suicidal tendency, backward, and given to several forms of sexual perversion. Medical examination gave a clew to his mental difficulty. Weight and height above normal, making him very heavy for his age. Flat-chested; heart-beat somewhat weak and râles in right lung. Network of varicose veins on both buttocks. Sexual organs showed contrasting development: overgrown penis, with entirely undeveloped testicles. Had been masturbating since childhood; indulgence in homosexual practices resulted in funnel-shaped rectum, which caused chronic constipation.

Careful exercise in the open air and special treatment relieved these serious conditions so markedly that a great change came over the boy. His sexual inverted acts ceased. His mental tests, after his main difficulties were removed, proved very satisfactory, showing him to be a mentally normal boy, with creditable power of judgment, logical and associative faculty, and good concentration. His memory span in visual and aural impressions remained narrow, and he had difficulty in graphic and constructive expression, being rather primitive in these things. The boy was plainly capable of considerable advancement, and with the further improvement of his physical condition there came a gain in temperament, application, and perspective. But as he had come under treatment too late, his psychopathic conditions reasserted themselves later and his reinstatement failed.

Case 65, D. T., boy, now 20 years old.—Distinctly primitive. To call him feeble-minded in the accepted sense would seem a superficial valuation. He is still very backward in his school studies, and did some absurd things in his judgment tests. Yet in others, those that required action of some kind, he did remarkably well, showing considerable penetration and quickness to learn a new thing. Thus, he learned to do all the five tests with the Knox cubes; connected one hundred dots rationally and immediately; was normal with his form board and the dissected pictures (graded series), etc. His drawbacks were, first, his extreme slowness of response, and, second, his very narrow memory span, both visual and aural. They account for his difficulty in learning and in building up a conceptual world on the basis of experience, for he cannot well learn from his so easily forgotten errors and experiences. The boy showed other faults which would stamp him ordinarily as a criminal. He had dirty personal habits and a strong inclination to pilfer eatables and glittering things, jewelry, money, etc. The money could have had no attraction to him, as he understood little of its value; neither had he any conception of the value of jewelry. There was simply the attraction of the tempting objects and the tendency to hoard, even though he forgot the hiding-places. Again, even when he had had a full meal, he would steal eatables in large quantities and gorge himself to nausea. All these traits are distinctly those of savage people, and would be altogether

normal among Igorots, New Zealanders, and the like. In other respects the boy showed intelligence, was good-hearted, companionable, and unselfish, liked to work on a primitive level, and was as harmless as a child.

CHAPTER XIII

AS TO STANDARDIZATION

Tendency to Establish Standards.—The tendency of the times is to establish “standards of efficiency,” “age standards,” “class standards,” standards in every branch of study in schools, in every line of human occupation, in business, in factories, etc. The work of the statistician is highly valued. Everything is to be expressed in quantitative terms. Schemas, curves, and other methods of graphic representation are widely applied. All these efforts have their importance and significance and are an expression of the modern desire for scientific accuracy of statement and procedure.

Standardization of Mental Tests.—The principle of standardization has also been applied to tests for measuring the mental capacity of children. It has been one of the reasons for the quick popularity of the Binet Tests that they seemed to lend themselves easily to a standardization of results. Each test had been placed in a definite group representing what was called “mental age.” The “mental age” was to be computed in a simple manner from the data obtained, on a numerical basis, and the examiner received the impression that he had arrived at a definite conclusion.

Difficulties Encountered.—The author has often been importuned to standardize his own tests in a similar manner, but has always hesitated to do so. It is true that, while the division of a child’s life into “mental

years" has seemed impossible to him, as the differences in type will constantly confuse results, he has endeavored to establish developmental periods as a basis of judgment. Even these, however well established as they may appear to be in regard to the main points (budding instincts, interests, abilities, tendencies, etc.), merge into one another so gradually that no hard-and-fast lines of demarcation can be drawn. In the development of the various characteristics of a certain period, or "culture epoch," there are hardly any two capacities or elements that develop at the same rate of speed of energy, so that, as has been shown elsewhere in this book, a given individual may be said to represent in reality various periods at the same time, being primitive in some mental manifestations, and modern in others.

Placing of Details.—A contention may be made that at least these various elements of development should be definitely placed in a scale of advancement. This the author has tried to do in a general way. He is also using the scales of standardization elaborated in psychological and other laboratories for certain particular tests. It is furthermore quite evident that the child who can complete forty of the completion test sentences (New Series of Tests, Language Test No. 3), or who can give thirty opposites out of forty (Language Test No. 5), is further advanced *in this particular thing* than another child who can complete only ten sentences and find fifteen opposites. Similarly, the degree of perfection with which any test is performed will allow conclusions as to the relative mental development *in regard to that particular performance*. But just as we have proof now that there is no such thing as "formal training," that is to say, that training in such branches as arithmetic, or

grammar, has no value beyond training *in these subjects* and does not necessarily produce greater proficiency in other subjects—just so development in any particular mental performance is not in itself proof of broad or general mentality on a corresponding level. The tests will reveal the performance level, but each of the performances stands, as far as the test goes, first merely on a qualitative basis. To suggest a definite quantitative method of recording the degree of perfection, and then computing from the data thus obtained the mental and moral status of a child, would seem preposterous. Whenever definite experiments are arranged in a psychological or pathological laboratory, they are intended to test and valuate specific reactions. A number of these reactions have to be compared and qualitatively balanced to allow of deductions which will throw light on the mental status.

The Personal Equation.—The author is reminded of an interesting statement made by a well-known investigator who has applied many different tests on a large number of subjects. In regard to the Binet scale he gave it as his opinion that in valuating the different answers the examiner is much influenced by his own sizing up of the situation, and of the kind of responses the child gives. In other words, the personal equation enters widely into the computation of results. That is the reason why child-experts must make these tests—those who understand child nature—and not persons who give the tests mechanically. For in reality the Binet Tests, as well as many others of a similar nature, are so simple that it might be thought any intelligent person can give them and compute the results. “If,” said this investigator to the author, “the child who is

being examined were placed behind a screen so that the examiner would not see him, simply putting down his answers, the inefficiency of these tests would at once be established. For their real value, as far as they have served their purpose, has depended upon the judgment of the examiner, which was added to the test in its mechanical construction."

Tests Merely Methods of Approach.—In consideration of the complex nature of the child, with its physical, emotional, and mental aspects, also in view of the very variable element of schooling and education, environmental conditions and personal experience, the author feels that we should refrain at the present time from trying to establish any definite standards and categories. No two children will answer the same question in the same way; no two children will understand the same question, if put in the identical words, in the same way. There must, therefore, be wide limits, even in the matter of putting the tests.

Doctor Robert M. Yerkes, of the Psychopathic Hospital, Boston, has developed what he calls a "point scale" for the measurement of intelligence. In this he uses Binet and other tests, but grouped in a manner of his own. Each test is grouped by itself, in graduated form, the performance becoming more complex and difficult in detail. A certain number of points is credited to the subject tested according to the performance level he reaches. So far the attempt at standardizing is interesting and instructive. But then Doctor Yerkes proceeds to establish mental age norms by scoring, so that *e. g.*, 17 points indicate a "mental age" of 4, 55 points a mental age of 9, etc., meaning that a "normal" child of these ages should score at least that number of points.

The science of child-testing is so very young yet that it would be disastrous if we should allow ourselves to be guided by a more or less mechanical scale, in placing a certain mental manifestation in a certain definite place of quantitative value, and judging a child accordingly. We may have to revise our standards continually on the basis of further experience. It is for this reason that we must use any kind of tests simply as systematized methods of approach, and otherwise apply with fairness and common sense our own standards of experience and judgment.

CHAPTER XIV

THE BINET SCALE OF INTELLIGENCE

Its Value for Comparison.—In the extensive system of tests sketched in Chapter XII, mention is not made of the Binet scale, except by way of criticism. The author does, however, apply it in the modified form suggested by the late Doctor Edmund Burke Huey, in his book on “Backward and Feeble-minded Children.” The purpose of its use in this schedule is to check up results and to allow of comparisons. Even Huey’s modification, however, the author felt constrained to amend in certain places.

The Author’s Amendments.—The *pictures* suggested by Binet he does not use at all, as they hardly portray American life. He has used some of the colored pictures selected by Doctor Goddard of Vineland as far more suitable, portraying as they do life and action, such as may be found anywhere in our country. At times any picture of a suitable nature which was handy was substituted, even silhouette drawings illustrating fairy-tales, and others which represented child life in various forms.

For the *drawings* in which “pretty” is to be distinguished from “ugly,” and in which missing eyes, mouth, nose, and arms are to be detected, the author has been using much enlarged forms in place of the rather diminutive originals.

In place of *two dimes*, used in test 36 for the mentality of 9 years, he uses a quarter, as it would seem absurd

to give two dimes for an article costing only four cents. This change, while modifying the arithmetical process somewhat, does not seem to vitiate the purpose or grade of the test materially.

The *questions of comprehension*, under No. 44, mentality of 10 years, were not modified by the author, although they impress him as singularly clumsy, badly worded, and referring to emergencies and conditions which are not altogether common in the experience of an "average" child of that age.

The *nonsense sentences*, under No. 46, mentality of 11 years, contain so much that is grewsome that the author felt constrained to substitute others. Under *C* (for which both Binet and Huey give the story of a young girl cut into eighteen pieces) he substitutes the following:

It was a bright day with a blue, sunshiny sky, when I took a walk. Suddenly I saw a big tree fall across the road. I thought at once that the lightning from the storm-cloud overhead must have struck it.

Under *D* (for which both Binet and Huey give the story of a railroad accident) he substitutes this:

Yesterday a poor boy lost his pocketbook. But his loss was not serious, as he had only \$50 in his pocketbook.

Under *E* he uses Huey's example.

Similarly, in the group of tests for 12 years, the writer has eliminated the first of the *incomplete stories*. Such a horrible experience as seeing a dead person hanging from the limb of a tree seems to him to be not only far beyond the natural experience of a child (would it be otherwise in France?), but altogether appealing to a

morbid imagination, which ought not to be stimulated. He has substituted the following story, which has a humorous strain:

Last night I was awakened by a terrible noise. I got up, greatly frightened, and looked out of the window. It was dark, and first I could not see; but the noise kept on. There was a screeching and whining and running, as if many people were in the yard in great distress. Then the moon came out and I saw (after a pause)—what?

The story should be told with a twinkle in the eye of the examiner. The proper answer would, of course, be: Cats fighting. Some people might think of dogs rather than cats; their answer would be acceptable. The situation is one which is experienced in both city and country life.

Criticism of the Binet Tests.—It is hardly necessary to enter here into a lengthy discussion of the Binet Tests, as a great deal has already been written about them, and occasional remarks are scattered through this book at appropriate places. Only a few things should be mentioned to illustrate why the author lays relatively little stress upon results obtained from them.

Language Tests.—Much of the series is based upon a child's ability to use language intelligently. While, generally speaking, a careful observer will deduct much information from a child's linguistic expression, it must not be forgotten that language develops with very different degrees of rapidity in children. There are persons who will never achieve much power of verbal expression without detriment to their general intellectual ability. The writer is not unaware of the wonderful effect verbal expression has upon clarifying a thought;

but thought may be expressed in various ways: through drawing and construction, through sculpture, or through gesture (as in dramatics), without language being required. Reading and writing are not arts which are deep-rooted in man's civilization, and there are levels of culture in which they play a minor part. Again, certain anatomical conditions and the psychopathic conditions of alexia and agraphia will produce practical illiteracy without affecting the mental capacity in the same degree.

Language efficiency also depends much upon environmental conditions and opportunity. Doctor Margaret Otis has made an interesting investigation of delinquent girls by the Binet method. She did not find the results very helpful. The girls failed markedly in the language tests. She explained this failure as follows:

The girls come from a class in society where fluency in language is not a pronounced characteristic. They have had no training in expressing thought either at home or at school, for in examining the question of school training we find that most of the girls have had little or none. The average age of the girls examined . . . is 17, while the average age at which they leave school is 13. . . . The average grade of school work reached is the fourth. . . . Four girls of the total number (172) reached high school, while seven had no schooling whatever. Fifty-seven left school before reaching the age of 14. With such limited school training it is no wonder that the girls lack the ability to express themselves, and show themselves deficient in the language tests, for the ability to use language depends more than any other on training, whether at school or at home. . . . These (Binet) tests alone do not tell all we wish to know about delinquent girls.¹

¹ Cf. "The Binet Tests Applied to Delinquent Girls," in *The Psychological Clinic*, October, 1913.

This experience is very interesting in view of the claim made for the Binet method that its application is independent of the school advantages of the children tested.

A strange corroboration of the inefficiency of these tests *even when children have had the advantage of school training* is given by Margaret S. Prichard, head of the department of psychology, Philadelphia Normal School for Girls, in a paper read in the autumn of 1914, in which she says: "The Binet scale . . . has been found to be too crude to be used for grading pupils in a class. For this purpose one must use a combination of tests, and it is significant that Stern proposes to gauge the value of the results obtained by comparing them with the estimate of the teacher. . . ."¹

Color Tests.—We may also consider the color test for the mentality of 7 years as being of doubtful value. Binet distinguishes between "color-perception" and "verbalization of color," claiming that the former is often very keen with even young children, while the naming is normal for the age of 7. But the color-blind child, even at the age of 7, may not be able

¹ It may be mentioned in this connection that an investigation by Rudolf Pintner and Donald G. Paterson, of the Ohio State University (published in *The Journal of Educational Psychology*, April, 1915), shows "that the Binet-Simon scale as it now stands cannot be applied satisfactorily to deaf children." A strange observation may be made, viz., that a number of investigators discover the inadequacy of the scale for their particular work—but rarely fail to add that it would possibly be usable in other fields, or that it might be amended, and enlarged, or what not—as if the Binet scale, *as such*, were a sacred thing, not to be touched under the charge of treason or sacrilege or "unscientific attitude." They fail to recognize that their criticisms, especially when they are combined and compared, in the aggregate, go to the very root of the Binet principles.

to distinguish the four colors—red, green, blue, yellow—without error in naming, so that color-matching tests should precede the naming test. It must also be conceded that even the proper naming of colors in an otherwise normal child depends somewhat upon his opportunity of training.

Weight Test.—The weight test is considered by Binet “as one of those which best detect intelligence without culture, as it is absolutely independent of all instruction.” At the same time he remarks “that the kind of intelligence indicated by it is of a very special nature. There are some children, very intelligent otherwise, who fail to arrange these boxes, while others do so accurately and with facility.” Very true. But if this is so, why should such a test be included in a series intended for the testing of general intelligence?

Repetition of Words and Numerals.—A particular feature of the Binet tests is the repetition of an increasing number of numerals, and of syllables arranged in words and sentences. This is distinctly a test of aural memory, not of intelligence. In discussing the results of these tests, Binet admits “decidedly the power of memory does not increase greatly with age.” Why, then, is this feature of the tests so prominent?

The Test of Sixty Words.—A difference of types, similar to the one admitted by Binet in the matter of weight conception, is recognized by him in reference to the test requiring the saying, or dictating, of at least sixty words in three minutes. In valuating results he counts only the *number* of the words given by the child, although he confesses that “the use of series of words and of abstract terms indicates a certain amount of intelligence and culture.” This very important qualitative element

is neglected in judging of the result of the test. The intention is to estimate "both the intellectual activity of an individual and his *verbal type* (the italics are the author's). Those who have many words at command, those who think in words, those who habitually think of abstract subjects, or those who are fond of puns, appear to have the advantage over others." The non-linguistic child, the child who does not habitually think of abstract subjects, the child whose talent is along graphic and constructive lines, will here make a bad showing. Likewise the timid, the reserved, the silent, the stolid child. And Binet's admission throws an interesting sidelight upon the author's contention in regard to the language tests criticised before.

Binet Results and School Standing.—It has been claimed that the results of the Binet Tests tally well with the general standing of a child in school. This has been taken as a vindication of their value. As a matter of fact, it would prove that this method tests practically the same faculties and types of response as are required in ordinary school work, so that the tests would seem superfluous. What we do need is something that goes "behind the returns," so that we may know *why* it is that a child has a certain rank in school. In many instances ordinary school work does not appeal to those children who offer difficulties, and their training must be of a different kind. It is also instructive to compare this claim that the tests tally with the school standing of a child with what has been stated by Professor Prichard as quoted on page 257.

Mechanical Computation.—The rules for computing the mental age of a child according to the Binet Tests are as follows:

The child has the intelligence of that age all the tests of which he succeeds in passing. Here is a child 9 years of age who passes all the tests for the seventh year; he has then at least the intelligence of a child of 7. After determining the age for which a child passes all the tests, a year is added to the intelligence age, if he has succeeded in passing five additional tests belonging to superior age groups; two years are added if he has passed ten such tests; three years if he has passed fifteen, and so on.

Thus a child passed the five tests for the eighth year; he has the intelligence of 8 years; in addition he passed three tests for 9 years and two tests for 10 years; we add one year for the five tests, the record stands $8 + 1 = 9$, and the child has an intelligence of 9 years. Another example: A child passed the five tests for 6 years; he has the intelligence of 6 years; he also passed three tests for 7 years, three for 8 years, two for 9 years, two for 10 years, and one for 11 years; this gives him eleven extra tests, and adds two years to his intelligence age, making it 8 years.¹ A last example: A child passed all the tests for 4 years; he passed in addition one test for 5 years, three for 6 years, two for 7 years, four for 8 years, three for 9 years, and two for 10 years; he has passed, then, fifteen additional tests, which is equivalent to three years, and he is accorded the mental age of 7.

This method of computation, in the first place, omits a consideration of the tests below the age in which a child tests full. Suppose a child tests full for 6 years, passing all the tests for that level; but he did *not* pass full in any of the previous groups, passing only two or three tests in any of them. What then? What significance has that in the computation of results? All of us know that such cases are quite frequent. Again: Suppose a child does not pass *all* the tests in any age group

¹ Some American investigators would mark his mental age 8.1. A more recent method is to use the basal year, only adding the number of additional answers in the form of an exponent, like this: 6¹¹.

—and even that has happened—which is then the starting-point for any kind of computation?

Finally, the mechanical way of computing the “mental age” of a child destroys much of the good that may be found in the Binet Tests for comparative valuations. For the test units, after all, refer to *different* mental qualities and faculties; some to the power of memory, others to those of discrimination, of language, of logical definition, etc. Suppose a child of 8 years would pass all the tests up to and including all for the mentality of 6 years. Even if he passed only those for 6 years, the result in the Binet computation would be the same: he would be put down as having a mentality of 6 years. In addition he would succeed in responding to Nos. 26 (counts 13 pennies), 30 (names red, green, blue, yellow), 32 (counts from 20 to 1), 33 (names days of week), 35 (repeats 5 numerals), 39 (names the months), 43 (repeats 6 numerals), 48 (gives at least 60 words), 51 (repeats 7 numerals), and 53 (repeats sentences of 23 to 26 syllables). These additional ten answers would give him two more years in mentality, or place him on the normal level for his age. But what about his intelligence? He has given evidence of a good memory of words and numerals. But is he equal in intelligence to another normal child of 8 who was able to answer the remaining questions, 27, 28, 29, 31, and 34 (using Huey’s enumeration), which are intended to test the child’s faculty of judgment and discrimination? Illustrations of this kind can be multiplied. Of course, if we consider that Binet and Simon do not base mental power on the power of judgment, but make a puzzling distinction between judgment and the intellectual level, we may understand why they ignore these differences of type.

Mental Age and Judgment.—It is instructive to find that this distinction is not made by all who use, and think they understand, the Binet scale. The February, 1914, number of the *Journal of Educational Psychology* contains some suggestions and recommendations made by members of the International Congress for School Hygiene on the Binet-Simon scale. Among these is this statement:

We believe that current misconceptions as to the aim of the scale should be removed. It is not intended to test the emotional or volitional nature, but primarily intelligence (judgment).

The parenthesis shows that the distinction between intelligence and judgment made by Binet himself is not made by these workers.

Binet Tests and Feeble-Mindedness.—The recommendations mentioned in the previous paragraph contain several other interesting statements. In a conversation Mr. Alexander Johnson, of Vineland, an expert in feeble-mindedness, stated that he did not consider the Binet Tests as more than a rough-and-ready method of grading the *feeble-minded* so as to distinguish between the various grades of mental defect without attempting to make finer distinctions. He did not think that these tests gave reliable information beyond the "mental age" of 10. Now, this expression stands in contrast to the following contention of the school hygiene experts as quoted before. They say (*loco cit.*):

The scale does not always furnish a sharp, nor a positive diagnosis of feeble-mindedness; in particular:

(a) A mental age of 10 or above is not necessarily indicative of feeble-mindedness, regardless of how old the examinee may be, and

(b) A young child may test almost at age and yet be feeble-minded as determined by other criteria.

Thus, the usefulness of the Binet Tests in investigations of this kind is distinctly limited.

Doctor Fernald says: "The Binet Tests corroborate where we do not need corroboration, and are not decisive where the differential diagnosis of the high-grade defective from the normal is in question."

Judgment of the Examiner.—Binet himself admits that in spite of the system of marking which he and his coworker Simon have devised, they believe that the experimenters must *judge*¹ of the responses which are made. He says: "Our method is not an automatic weighing machine, such as the scales of the railroad stations which print an individual's weight entirely unaided." In fact, he states:

The researches which have enabled us to calculate our norms were made in those primary schools of Paris which are situated in the poorer districts. Experience has demonstrated that the children of persons in easy circumstances present in general a higher intellectual development than that expressed by our means. Thus, in a private school frequented by the bourgeoisie, and where the classes consist of from eight to ten pupils, the pupils show a mean one and one-half years in advance of our normal means. It is important to add that our examinations have been made but once, and by a stranger, who, without intimidating the child, inspired him with a certain deference. Other results would be obtained if the examination were repeated several times or if it were conducted by a person too well known to the child to produce a deferential attitude, etc., briefly, if the very precise conditions which we have indicated were ignored.

¹ Cf. p. 251.

These admissions are indeed very illuminating. That results obtained in this wise should have been readily accepted in this country as standards is one of the strange things in the development of science which astonish the historian.

Mental Quality.—All this goes to show that after all is said the Binet Tests are not the last word in gauging a child's mental development and ability. The Binet scale fails to reveal the *quality* of a child's mind, and after all it is this quality alone which is of educational value, and the determination of which helps us to make an educational diagnosis and prognosis. It is most interesting to quote Binet's own words, in which he concedes this very fact. He says:

If one relied wholly upon the results of our measuring scale, one would not be able to grasp the mental differences which separate an imbecile from a general paralytic. Shall we conclude that these subjects have the same mentality? Evidently not. We must put our readers on their guard against this erroneous interpretation of the bearing of our measurements. The scale which we use is constituted by a series of small problems of intelligence, and it is quite possible that two individuals fail in the same problems without, for that, having similar mentalities. The practical consequence, the efficiency of their mentality, is the same, but the mentalities may be different.

Our scale resembles very much a standard, which instead of measuring height, measures the intelligence; but just as the ordinary standard gives no information regarding the normality of the corporal development, and may indicate the same number of centimetres, for a normal child and for an adult hunchback, so our scale gives the actual level of mentality, without analyzing it and without giving any information as to its type.

In the light of other admissions, it is very doubtful, indeed, whether the scale gives even "the actual level

of mentality," or "the practical consequence, the efficiency of their mentality."

Other Admissions by Binet-Simon.—Other interesting confessions of the authors of the scale are these:

Several tests admittedly cover several years, or stages, of mental development, thus giving weight to the differentiation of periods rather than of "mental years."

Within the "mental years," they distinguish between "bright ones" and duller ones.

They find it "very difficult to distinguish between the intellectual levels of seven and eight years," while on the other hand they recognize "the enormous advance from the point of view of language which takes place between six and seven years," thus again corroborating the advisability of distinguishing periods in preference to mental ages. The sixth year in a child's life, taking this figure as indicating a developmental epoch, marks a distinct transition.

They also admit that their examination "tends toward a low grading of the child," so that, even if we would take it for granted that these tests help in detecting mental defect, we should have to be very charitable in grading results.

On the other hand, this last admission is in contrast to the one quoted before (p. 263) which would indicate rather that the children who were taken as "normals" came from the less intellectual strata of Paris.

What Is Intelligence?—The Binet Tests which correlate intelligence with age are avowedly tests of "intelligence." But what is intelligence? Professor J. C. Bell calls the selection of the Binet Tests largely a matter of caprice. Intelligence may be considered as designating that part of the mind, or soul, that *knows*; as differ-

entiated from the feelings and the will. It is rather an ancient type of psychology which makes distinctions of this kind. We note that all the so-called different faculties of the soul are intimately interrelated and dependent upon one another—that feeling enters into volition; that volition determines knowledge, etc. Again, we note that the soul is not an entity but a composite, made up of elements, physiological, psychological, spiritual, and what not, which we are not able to define in their fulness.

But in judging of a child's mind, his soul, or his status in society, his educational and social possibilities, we must certainly take into account the *different functions* of what is collectively called the "mind." There is the logical memory as against rote memory; there is attention, and concentration, imagination, association, and reasoning; there is the faculty of initiative, of self-assertion, self-direction, and self-criticism. There is the sense of self as against the social sense and the social attitude. There are the different psychoses and those mental states that are conditioned by physical causes of various kinds. There are the different levels of culture. The laborer level and the professional level represent two distinctly different types of mind, and there are many other types of mind, as has been shown in other places in this book.

Reference may be made once more to the statement of Doctor Tredgold mentioned in a previous chapter ("The Feeble-minded Group," p. 161) that the real difference between the feeble-minded and the potentially normal child is the presence or absence of "common sense." If that is lacking, its want can never be supplied. What we need, then, is tests which will deter-

mine this one thing: Has the child sufficient common sense to be able to lead an independent existence? No mechanical computation of any kind of tests will help matters very much. *The common sense of the examiner must strike the spark of common sense in the subject examined.*

"Common sense," as has been shown on page 183, is only another expression for the intellectual aspect of *efficiency*. The author may be permitted to repeat here what he considers the main criterion of difference between the feeble-minded and the potentially normal—a difference which the tests must assist in discovering—viz., that an ament can only acquire skill, even though eventually reaching a high performance level; a normal person may never develop much skill and may remain forever on a low performance level, but he possesses efficiency, which lifts him upon the plane of human fellowship.

CHAPTER XV

THE MEANING OF AN EDUCATIONAL CLINIC

Various Kinds of Clinics.—For the work here proposed the term “educational clinic” is suggested by the author. The reasons for choosing this term are as follows:

We have been hearing a great deal lately of clinical work done for children in connection with the psychology departments of universities. Medical schools and hospitals have established clinics for the examination of children, and have extended their work so that their examinations included mental tests, so-called, as the special function of the pediatricist, or the neurologist. There are also psychopathic clinics which have been opened for work with children presenting difficulties and being suspected of mental defect. When the mental testing of school children began to be introduced into organized school systems, like those of the larger cities of this country, they were thought to require the services of a trained psychologist or medical man. In the unformed state which characterizes the initial stages of any work of this nature, much confusion has necessarily arisen as to the functions and limitations of the various types of research agencies, clinical provisions, and types of investigators required.

The author's views differ in a measure from those of others working in this field. It would seem to him that a distinction must be made between the different *kinds* of investigations and their purposes.

Genetic Psychology and Child Study.—It will be cheerfully admitted that the workings of the mind of the growing child have become better understood through what has been called "*genetic psychology*." There is no question about the psychologic aspect of the child problem and about the need of co-operation of trained psychologists, especially experimental psychologists. This, however, does not mean that the clinical work must be exclusively psychologic. Child study in its broader aspect goes beyond mere psychology. Child study has been helpful in showing the intimate relationship between bodily and mental states. The old proverb, "*Mens sana in corpore sano*" has assumed increasing significance with the revelations which have come to us through *medical inspection* of school children. It has been truly said that the child must be taken as a whole, as a body no less than as a mind, in order to receive his full understanding during the time of growth. Mental growth, spiritual growth, and emotional growth are paralleled and conditioned in a measure by body growth. But it would be erroneous to draw from this the conclusion that the medical side of a child's problem is the only or the determining factor of his growth.

The Psychological Clinic.—A "psychological clinic" (so far as it pertains to the child problem), especially one which is connected with a university, has its distinct function, or functions.

One of these functions is to assist students in acquiring a practical understanding of child nature and of a child's mental growth. For this purpose a certain amount of actual child material will have to be worked with. The children thus examined represent, however, merely *study types*. They are being tested not so much

for their own benefit as for the benefit of those who should learn from them, although naturally they *may* be helped individually if the results of the study lead to action in their behalf. It will suggest itself that the head of the department would carefully select children with whose types he wishes to familiarize his students, as the work will necessarily be in the nature of a demonstration. In a way, this work may be likened to the work in medical clinics and dispensaries where the students are invited to observe typical treatments and operations to familiarize them with the details of such work. For practical experience they may also be given certain cases to work upon under the supervision of their teachers.

The author is, of course, well aware of the fact that dispensaries, clinics, and hospitals are used by the medical men also for postgraduate work and for further study. In the same manner the expert psychologist may wish to enlarge the functions of the psychological clinic of a university so as to include a number of cases which would afford him possibilities of further research work. For the medical man these possibilities are not all directly connected with the medical college, but are found in the numerous private institutions for the relief of disease, the hospitals and dispensaries. Likewise university psychologists may find their field for further investigations on a larger scale in connection with *educational clinics*, which should be established in connection with public and private school systems.

The second distinct function of a psychological clinic, as it appeals to the author, is to conduct investigations *along specific lines*. This would entail intensive work on selected, definite psychological problems with a great



FIG. 11.—Educational clinic of the National Association for the Study and Education of Exceptional Children, Plainfield, N. J.



FIG. 12.—Educational clinic, "Herbart Hall." Color tests. Tone tests. Peg-board. Knox test. Picture cubes. Screen. Building windmill, etc.

number of individuals, adults and children, normals and exceptions. In this manner, various kinds of tests may be evolved for the testing of specific capacities and conditions in child growth. Standards may be established, meeting definite limitations, and a routine of practice can be developed. From these investigations the practical work of the educational clinic, as well as the routine work of the psychologic clinic will profit. In the author's own schedule of educational tests, a number of such data have been included. Mention may be made here of the illusion tests, the completion test, the picture-arrangement test, the form-board tests, etc.

In institutions organized for the special treatment of certain psychic defects, this psychologic research work may be done particularly well and profitably. Reference should be made to the excellent work which has been done in institutions for the feeble-minded and epileptic, as, for instance, at Waverly, Mass.; Fari-bault, Minn.; Vineland, N. J.; Columbus, Ohio; Skillman, N. J., and Sonyea, N. Y.; also in connection with juvenile courts, as in Chicago, New York, etc.

The Psychopathic Clinic.—Here, however, we are reminded of another aspect of research and clinic work. The distinct difference between the feeble-minded and the psychopathic type has been repeatedly pointed out. Neuroses and psychoses must be differentiated from imbecility and moronism. Here we find the need of a psychopathic clinic for children. This is medical work of a highly specialized kind. Neurologists and psychiatrists will have to do this work under conditions to be determined by them. In fact, the number of children suffering from some nervous or psychic disorder is much larger than is generally assumed.

It will therefore be of the greatest consequence that there be psychopathic clinics and laboratories to which children presenting danger-signals along this line of observation can be referred. However, this does not imply that a psychopathic clinic can take the place of an educational clinic.

Medical Clinics.—Likewise medical clinics of different kinds, in departments for children's diseases, in children's hospitals, dispensaries, and similar institutions; dental clinics; eye, ear, nose, and throat work; orthopedic clinics; tuberculosis clinics, and pathological laboratories for the making of blood tests, serum tests, etc.—will be so many helpful agencies in securing a complete and correct diagnosis of a child's case.

The work of *medical inspection* will suggest many opportunities for the development of such clinical work in schools.

But a medical clinic cannot take the place of an educational clinic.

Sociological and Ethnological Research.—Many symptoms of a child's case may point to causes of his difficulty which are neither psychologic nor medical. The conditions of his home, his companionship, his environment in general, the social conditions determining the character of his life experiences; the elements of heredity and of family history; of race and color; of immigration and citizenship, and many other factors go far to affect and direct a child's career, often more decisively than his physical or mental health and disease. We may therefore also think of sociological research work as well as of the studies of the ethnologist in connection with diagnosing the puzzling case of a particular child.

The Educational Clinic.—But it would seem that the central guiding thought is the solution of the problem of what can be done *educationally* for a given individual child. That would seem to be the reason why the educational aspect must be the determining factor in this work. The educational view-point, the educational outlook, and the educational process are of the greatest concern. The purpose should not be, in dealing with an individual case, to arrive at statistical facts, or to fit the child into a general scheme, but to discover what we can do *for that child*.

The educational clinic is for the individual child and his problem.

The ultimate purpose of all educational investigation and measurement in a city school system should be to increase the effectiveness of the instruction which each child is to receive. Every educational agency, *i. e.*, every supervisor, every special teacher, every regular teacher, every school building, all textbooks, all educational equipment of whatever kind, in fact everything within the public school system, is fundamentally for providing the instruction which the child needs *to make him individually and socially efficient*. (The italics are the author's.)¹

This clipping states the case of the educational clinic from the point of view of its practical usefulness.

It should be presided over by an *expert educator*, who has not only the technical, scientific training for his profession, but also a deep sympathy with child nature; one who can read a child's soul, who can win the confidence of the child, who believes in the child. He must

¹ From a paper read before the American Association for the Advancement of Science, December 30, 1914, on "The Function of a Department of Educational Investigation and Measurement in a City School System," by Frank W. Ballou, Boston.

have psychological training in order to understand the genetic problems of the child mind. He ought to have had some training in the medical aspect of his problem, so as to gain at least the medical point of view. He should have had enough training in both these sciences *to know his limitations*, to comprehend when to call upon the professional psychologist and medical man (or woman) for advice and co-operation. It is only through superficial knowledge of any science that a man is tempted to dabble in everything. But be it understood, at the head of an educational clinic must be an educator, not a psychologist or a physician.

The educational clinic should be in direct touch with the medical inspection work of the school system. There should be co-ordination of effort. Its chief should know *how* to correlate his work with the progress of psychology and medicine, especially of psychopathy, and how to co-operate professionally with the leading men of these professions.

Another aspect of this work is this: In order to do the best work for the greatest number of children we must arrange matters so that we can reach out, in a well-organized plan, to as many school systems and school children as possible. If we had to rely upon the trained psychologists and medical specialists to do the practical clinical work, we should never reach the smaller towns and the rural communities. Let us not forget that the greatest number of school children live in the rural districts. Under present conditions they cannot receive the benefit of clinical work at all.

System of Tests.—An educational clinic should arrange a system of tests so simple, with an equipment so inexpensive, that it may be introduced even in small

communities where the item of expense means much. The technic and routine should also be so simplified that intelligent and well-trained school superintendents, supervising principals, and even teachers may be found to be willing and capable of receiving special training in conducting their local educational clinics. Naturally the results of their testing can be only tentative, but it will help them to differentiate between children of different types, and to make them desirous of referring cases to psychological and medical experts and clinics for further advice.

Network of Clinics.—An educational clinic, as the author conceives it, is not in competition with any psychological, psychopathic, or general medical clinic. Quite the contrary. It may be considered a *feeder* of the others, since only a small percentage of children will need a special psychological or psychopathic examination, or special medical treatment of the kind that has to be given by experts. We may think of an arrangement which would provide for half a hundred or more educational clinics to one of the others. It is, of course, understood that the educational clinic of any school system, large or small, would be in constant touch with the medical inspector of the district. It will also be found that the medical fraternity in every place will be quite ready to co-operate.

Educational clinics may also be organized for systems of *private schools*; in connection with *social centres* not otherwise provided for; and with *children's and juvenile courts* and *detention homes, truant schools, reformatories*, etc. The system of reference may be the same.

CHAPTER XVI

SCHEDULE OF TESTS

Completer Schedule.—In the author's book, "The Study of Individual Children," a full description is given of the schedule of tests as it was developed by him in the school for exceptional children, Herbart Hall, at Plainfield, N. J. This schedule is outlined in Chapter XII of this book. In the light of later investigations the author's practice in the educational clinics organized by him has been somewhat modified by omitting some of the old tests and adding new ones, and by substituting new tests for old ones.

As will be remembered, the schedule employed there is a very extended one. To collect all the material required for completing these tests, a long observation is imperative. The schedule is supplemented by studying the actual work of the pupils in the school, their conduct in the classroom, on the playground, and in their companionship with others in their school home, their life habits, and their emotional states.

The Briefer Schedule.—For the purpose of shorter clinical examinations a new schedule has been compiled, much briefer and more condensed. In this way larger numbers of children can be reached, through the organization of educational clinics, in connection with school systems, courts, etc.

Even this shorter schedule, however, lends itself to

the use in connection with observation classes and schools, parental schools and other provisions in any school system for a fair observation and study of children.

Care has been taken to arrange the schedule so that it can be inexpensively introduced into almost any school system, even smaller towns and rural districts. The equipment has been simplified in every way. As in the larger schedule, many of the tests can be applied to groups of children at a time, in the classroom, if necessary. Most of them are devised in such a manner that they have the character of play and from the start give the child the benefit of a gratification of childish instincts and interests.

Still further to put the child at ease and to give him the feeling that he is in a pleasant environment and not in a "clinic," as this term is for the most part understood, the author has taken care that the rooms in which he conducts his own work are attractively equipped. Only such apparatus is in evidence as will arouse the child's eager interest. The walls are decorated with silhouettes and pictures illustrating child and animal life, or representing fairy-tales, well-known figures from the Mother Goose Tales, and the like. All this *seems* to be for decorative purposes only, but furnishes at the same time test material, for the identification of pictures, story-telling from pictures, etc. The whole atmosphere of the place where such investigations are conducted must be inviting, cheerful, playroom-like.

The condensed schedule comprises four cards, using three different colors for ready discrimination. The first card, *white*, is a *Child History* card. The second,

blue, is intended for a record of *physical examinations*. The remaining two, *yellow*, are reserved for the *educational tests*.

(I) CHILD HISTORY

The blank card is as follows:

EDUCATIONAL CLINIC

No.....
 Referred by.....(Organization or person) per.....
 Address.....Date.....

CHILD HISTORY

Name of child.....Date of birth.....
 Place of birth.....Address.....
 If foreign-born, how long in this country?.....
 Name of father.....Mother.....
 Born when?.....
 Born where?.....
 Immigrated when?.....
 White or colored?.....
 Occupation.....
 Health and disease.....

 Living or dead?.....
 Cause and time of death.....

 Grandparents and other relatives.....

 Other children (including still-births and miscarriages).....

 Order and conditions of birth.....

 Diseases child has had (state date, etc.):
 Appendix.....Infantile paralysis.....Rickets.....
 Bladder.....Inflammation of bowels Rupture.....
 Cerebro-spinal men-.....Scarlet fever.....
 ingitis.....Inflammation of brain..Scrofula.....
 Colon.....Smallpox.....

Convulsions.....	Insanity.....	St. Vitus's dance.....
Diphtheria.....	Kidneys.....	Stomach.....
Ear disease.....	Liver.....	Throat.....
Epilepsy.....	Measles.....	Thyroid gland.....
Eye disease.....	German measles.....	Tuberculosis.....
Fevers.....	Neuralgia.....	Typhus.....
Genitals.....	Nose.....	Varioloid.....
Headaches.....	Ophthalmia.....	Whooping-cough.....
Head eruptions.....	Pleurisy.....	Other diseases.....
Heart.....	Pneumonia.....	
Hemorrhage.....	Rheumatism.....	
Other physical conditions.....		
Moral status.....		
Special characteristics and tendencies.....		
Mental status.....		
School grade.....	Reading.....	Writing.....
Language.....	Nature.....	History.....
Manual work.....	Art.....	Geography.....
Music.....	School progress.....	
General intelligence.....		
Remarks.....		
Home conditions.....		
Additional information.....		
Reason for reporting child.....		
Parent's or guardian's signature.....		
Reported at clinic.....		

19...

On this card the child history is considerably condensed as compared with the one used with the author's larger system of tests. It is, however, of the greatest importance to obtain as much information as possible from parents, relatives, friends, and physicians. Much light is thrown upon the child's condition and its causes by facts about the parents and relatives, and their mental and physical health and disease. The home conditions—which affect a child's status considerably and are

often much more powerful in their effect than alleged hereditary influences—require the closest scrutiny. School nurses, friendly visitors, social workers are among the agencies to give helpful reports when we come to cases from the slums. A good method to collect information is to work through parent-teachers' meetings, visits of teachers in the homes of their pupils, and similar occasions.

It is well to note which place the child occupies in the number of births—whether he is the first, second, third, etc., child. First children and last-born children are apt to suffer from more or less distinct handicaps. There are biological reasons, economic reasons, reasons of educational experience, effects of spoiling, etc. How many children are there? How many boys, how many girls? Among the children born to the family, are there any dead? What was the cause of their death? At what age did they die? How did they number in the order of birth? Were there any still-births or miscarriages? In the case of the latter, in what month of pregnancy? What were the possible causes? As a matter of fact, it is important to number still-births and miscarriages in the order of births, just as if they represented children actually born. This information may explain why children born previous to, or after, still-births and miscarriages were handicapped; the condition of the mother has to be carefully considered. Did the mother try to prevent motherhood? Was the child an unwelcome child? It is, of course, hardly to be expected that all this information can be easily or completely obtained. But discreet efforts should be made to disclose as many facts as possible.

The *conditions of birth* should be noted. Was the

child born at full term? Was birth natural or was child taken with instruments? What were the conditions of labor?¹ Was the mother under physical or mental strain during pregnancy? Was the child nursed or bottle-fed?

The record of *diseases* and other physical conditions should be carefully made. The age, or year, when the child had a certain disease should be recorded. There is a distinct relation of some physical conditions with others. For instance: headaches are often caused by visual impairment, by nasal-pharyngeal obstruction, or digestive troubles. The effect of scarlet fever or measles is not rarely one of general lack of tone and resistance.

Regarding the *moral status* of a child we may have to be satisfied with statements of unwarranted opinions unless teachers and parents have learned to interpret a child's conduct in terms of danger-signals. But even mistaken judgments of a child's conduct may well be recorded, as they show how a child reacts upon others.

Similarly, the child's *special characteristics and tendencies* should be noted down as far as information can be obtained. It should be mentioned in this connection that a child often reacts very differently upon his school

¹ Even a very difficult birth by no means predestines a child to become handicapped in life. The great German poet, Goethe, caused his young mother (she was only 18 years old when she gave birth to her first-born, who was to become one of the greatest of the human race) much suffering before he saw the light. She suffered mortal agony for three days before the child was delivered. And the young babe looked so lifeless and miserable that it was thought he was still-born. For hours they rubbed his body with wine, until finally he opened his eyes and—lived. It is worthy of notice that the young mother did not have the assistance of an obstetric physician in her severe labor, but had to rely on midwife and grandmother. At that time there was no such person as a gynecologist or obstetrician in Frankfurt. (Case 36.)

environment from the way he reacts upon his home environment. Both sides of a child's nature should find recognition in these statements.

The *mental status* of the child should be recorded as impartially as possible. Space has been provided for statements on school progress and on general intelligence. These two are by no means always parallel. These points have been set forth in detail in the chapters of the first part of this book, so that they need no reiteration here. The career of some successful school pupils has ended in an institution for the feeble-minded or in an almshouse.

Thus, the school grade a child has reached is of relatively little significance, although it is well to have it on record. It is the practice in many schools which have no other ways of disposing of backward or non-conforming children, to move a pupil to the next higher grade after he has been in the lower for two years, even unsuccessfully. This is not a promotion for scholarship, for of scholarship there is none, but for what is reckoned to be age and maturity. Thus, we may find children in the fourth or fifth grade who are really doing the work of the first. From the fourth or fifth they may drop out, having reached the limit of school age without having received any school education at all. In other places a pupil stays in a class unpromoted year in, year out, no matter what his age may be. Thus we may find children of fourteen years in the primary grades. It is difficult to say which one of these two plans is the more vicious. On the other hand, some children may pass rapidly through the grades, owing to some mechanical perfection, without that real mental maturity which the scaling of every successive grade would seem to involve. The truly bright and talented child is often lost in the mass.

We can hardly expect to have anything but ordinary school marks on this card, in the record of the child's standing in the various branches of instruction. But even these are significant for comparison, and for sizing up the child's predicament.

(2) PHYSICAL EXAMINATION

The blank card contains the following items:

EDUCATIONAL CLINIC

No. Date child was examined.

PHYSICAL EXAMINATIONS

Name of child. Date of birth.
Examiners.

Height standing. Height sitting. Weight.
Lung capacity. Grip. Push. Vital index.
General appearance. Nutrition.
Head. Cephalic index.
Eyes.
Ears.
Nose.
Mouth.
Teeth. Palatal arch.
Tonsils. Pharynx.
Glands.
Chest.
Lungs. Von Pirquet.
Heart.
Spine.
Digestive apparatus.
Urine.
Blood. Wassermann.
Genitals.
Sexual function.
Extremities.
Gait and station. Prehension.
Dexterity.
Chorea. Habit spasms.

other than that the child be "average" in these measures. In other words, a child may represent a smaller or a larger type without danger to his development, provided height and weight measures correspond. But if he should weigh less than the average boy of his age, yet his height be average or even above the mean for his age, or vice versa, there is reason to investigate. Excessive or distinctly stunted growth is, of course, also abnormal. But it has been found that in general the larger and taller children are more successful than the smaller ones. Loss of weight is a danger-signal.

Attention is again called to the tension which may be caused by discrepancies between the chronological, anatomical, physiological, and psychological growth periods of a child. Stunted growth and underdeveloped functioning, coupled with overalert and precocious mentality, will predispose a child for a collapse. There are also children with precocious physical growth, unaccompanied by corresponding mental development, often being decidedly backward intellectually. Absolute normal poise, when all the different aspects of human personality are well related, is comparatively rare.

The following tables, taken from Hastings' "Manual of Physical Measurements," with the centimetres figured in inches and the kilos figured in pounds, will give the results of measurements of many children for comparison with the figures obtained for the individual child under observation. This table gives, in addition to the mean for every age, various sizes with the normal corresponding weight. In the light of what has been said in the preceding paragraph, this table is more valuable than one which would only state age averages. An age average has little significance for the individual case.

HEIGHT AND WEIGHT MEASUREMENTS OF BOYS

From Hastings' "Manual of Physical Measurements"

AGE OF 5				AGE OF 6			
cm.	in.	kilo.	lbs.	cm.	in.	kilo.	lbs.
112.00	44.01	21.02	46.24	116.00	45.58	21.92	48.22
110.00	43.23	19.20	42.24	114.00	44.79	20.85	45.87
108.00	42.44	18.84	41.44	112.00	44.01	19.89	43.75
106.00	41.65	18.26	40.17	110.00	43.23	19.49	42.87
104.00	40.87	17.50	38.50	108.00	42.44	19.02	41.84
102.00	40.08	17.29	38.03	106.00	41.65	18.21	40.06
100.00	39.30	16.31	35.88	104.00	40.87	17.82	39.20
98.00	38.51	15.99	35.17	102.00	40.08	16.36	35.99
Mean: 105.78	41.75	17.86	39.29	110.67	43.49	19.37	42.61
AGE OF 7				AGE OF 8			
122.00	47.94	24.51	53.94	127.00	49.91	26.93	59.24
120.00	47.15	22.78	50.12	125.00	49.12	24.64	54.20
118.00	46.36	22.00	48.40	123.00	48.33	24.47	53.63
116.00	45.58	21.50	47.31	121.00	47.54	23.74	52.22
114.00	44.79	21.00	46.21	119.00	46.75	22.35	49.17
112.00	44.01	19.48	42.86	117.00	45.97	21.77	47.89
110.00	43.23	19.39	42.67	115.00	45.18	21.11	46.44
108.00	42.44	18.38	40.45	113.00	44.40	19.72	43.38
Mean: 115.69	45.46	21.30	46.49	121.31	47.67	23.14	50.90
AGE OF 9				AGE OF 10			
132.00	51.87	28.36	62.39	136.00	53.44	30.82	67.80
130.00	51.08	27.26	59.97	134.00	52.65	29.15	64.13
128.00	50.29	26.87	59.11	132.00	51.87	28.14	61.90
126.00	49.51	25.54	56.18	130.00	51.08	27.53	60.56
124.00	48.72	24.70	54.34	128.00	50.29	26.27	57.79
122.00	47.94	24.07	52.95	126.00	49.51	25.78	56.71
120.00	47.15	22.72	49.98	124.00	48.72	24.90	54.78
118.00	46.36	21.49	47.27	122.00	47.94	24.01	52.82
Mean: 125.86	49.56	25.07	55.15	130.95	51.46	27.85	61.27
AGE OF 11				AGE OF 12			
142.00	55.80	34.78	87.51	146.00	57.73	37.56	82.63
140.00	55.01	32.40	71.28	144.00	56.58	35.74	78.62
138.00	54.22	31.08	68.37	142.00	55.80	34.54	75.98
136.00	53.44	30.29	66.63	140.00	55.01	34.04	74.88
134.00	52.65	29.51	64.92	138.00	54.22	33.27	73.19
132.00	51.87	27.73	61.00	136.00	53.44	30.68	67.49
130.00	51.08	28.52	62.74	134.00	52.65	30.39	66.85
128.00	50.29	25.88	56.93	132.00	51.87	28.44	62.56
Mean: 134.90	53.01	29.86	65.69	140.29	55.13	32.98	72.55

AGE OF 13				AGE OF 14			
cm.	in.	kilo.	lbs.	cm.	in.	kilo.	lbs.
154.00	60.51	43.98	96.75	164.00	64.45	54.77	120.49
151.00	59.33	39.62	87.16	160.00	62.87	48.50	106.70
148.00	58.15	38.18	83.99	156.00	61.30	45.50	100.10
145.00	56.98	36.06	79.33	152.00	59.73	42.33	93.12
142.00	55.80	35.30	77.66	148.00	58.15	39.46	86.81
139.00	54.62	33.66	74.05	144.00	56.59	36.85	81.07
136.00	53.44	31.82	70.00	140.00	55.01	34.74	76.42
133.00	52.26	29.09	63.99	136.00	53.44	30.76	67.67
Mean: 145.09	57.02	35.60	78.32	151.02	59.34	39.73	87.40
AGE OF 15				AGE OF 16			
170.00	66.81	60.45	132.99	173.00	67.98	64.09	140.99
166.00	65.23	54.43	119.74	170.00	66.81	58.07	127.75
162.00	63.66	52.95	116.49	167.00	65.63	56.36	123.99
158.00	62.08	48.98	107.75	164.00	64.45	55.00	121.00
154.00	60.51	44.54	97.98	161.00	63.27	52.88	116.33
150.00	58.95	41.59	91.49	158.00	62.09	47.12	103.66
146.00	57.37	38.68	85.09	155.00	60.91	44.09	96.99
142.00	55.80	35.68	78.49	152.00	59.73	40.00	88.00
Mean: 158.18	62.16	46.95	103.29	163.73	64.34	52.90	116.38
AGE OF 17				AGE OF 18			
178.00	69.95	63.56	139.83	180.00	70.72	66.27	145.79
175.00	68.77	62.39	137.25	177.00	69.54	64.32	141.50
172.00	67.59	58.64	129.00	174.00	68.30	62.73	138.00
169.00	66.41	57.14	125.70	171.00	67.20	60.78	133.71
166.00	65.23	55.97	123.13	168.00	66.02	57.27	125.99
163.00	64.04	53.18	116.99	165.00	64.83	54.24	119.32
160.00	62.87	49.88	109.73	162.00	63.66	54.36	119.59
157.00	61.66	45.45	99.99	159.00	62.47	53.13	116.88
Mean: 169.98	66.80	56.82	125.00	171.07	67.23	59.25	130.35
AGE OF 19				AGE OF 20			
182.00	71.52	67.61	148.74	184.00	72.30	74.77	164.49
179.00	70.34	65.11	143.24	181.00	71.12	66.93	147.24
176.00	69.16	64.09	140.99	178.00	69.95	65.18	143.39
173.00	67.98	61.93	136.22	175.00	68.77	63.68	140.09
170.00	66.81	60.60	133.32	172.00	67.59	60.45	132.99
167.00	65.63	58.91	129.60	169.00	66.41	59.32	130.52
164.00	64.45	56.95	125.29	166.00	65.23	59.14	130.10
161.00	63.27	52.67	115.87	163.00	64.04	54.59	120.09
Mean: 171.89	67.52	61.71	135.76	172.22	67.67	61.09	134.39

HEIGHT AND WEIGHT MEASUREMENTS OF GIRLS

From Hastings' "Manual of Physical Measurements"

AGE OF 5				AGE OF 6			
cm.	in.	kilo.	lbs.	cm.	in.	kilo.	lbs.
112.00	44.01	20.74	45.62	116.00	45.58	21.36	46.99
110.00	43.23	18.71	41.16	114.00	44.79	20.20	44.44
108.00	42.44	18.86	41.49	112.00	44.01	19.64	43.20
106.00	41.65	18.22	40.08	110.00	43.23	19.01	41.82
104.00	40.87	17.27	37.99	108.00	42.44	18.28	40.21
102.00	40.08	16.84	37.04	106.00	41.65	17.73	39.00
100.00	39.30	16.02	35.24	104.00	40.87	16.93	37.24
98.00	38.51	15.23	33.50	102.00	40.08	16.31	35.88
Mean: 105.38	41.41	17.32	38.10	109.90	43.19	18.50	40.70
AGE OF 7				AGE OF 8			
121.00	47.54	23.04	50.68	126.00	49.51	25.53	56.16
119.00	46.75	22.44	49.36	124.00	48.72	23.98	52.75
117.00	45.97	20.78	45.71	122.00	47.94	23.24	51.12
115.00	45.18	20.76	45.67	120.00	47.15	22.18	48.79
113.00	44.40	20.10	44.22	118.00	46.36	21.49	47.27
111.00	43.61	19.65	43.23	116.00	45.58	20.85	45.87
109.00	42.82	18.42	40.52	114.00	44.79	20.23	44.50
107.00	42.04	17.38	38.23	112.00	44.01	18.90	41.58
Mean: 114.95	45.17	20.70	45.54	120.16	47.22	22.17	48.77
AGE OF 9				AGE OF 10			
132.00	51.87	28.61	62.94	136.00	53.44	31.40	69.08
130.00	51.08	27.06	59.53	134.00	52.65	29.20	64.24
128.00	50.29	25.90	56.98	132.00	51.87	28.14	61.90
126.00	49.51	25.33	55.72	130.00	51.08	26.59	58.49
124.00	48.72	23.85	52.47	128.00	50.29	26.31	57.88
122.00	47.94	23.35	51.37	126.00	49.51	25.32	55.70
120.00	47.15	22.76	50.07	124.00	48.72	24.24	53.32
118.00	46.36	21.34	46.94	122.00	47.94	22.70	49.94
Mean: 126.17	49.59	24.90	54.78	131.29	51.59	27.16	59.75
AGE OF 11				AGE OF 12			
142.00	55.80	34.03	74.86	152.00	59.73	42.36	93.19
140.00	55.01	31.82	70.00	149.00	58.55	38.86	85.49
138.00	54.22	31.25	68.75	146.00	57.37	36.93	81.24
136.00	53.44	30.27	66.59	143.00	56.19	34.85	76.67
134.00	52.65	28.35	62.37	140.00	55.01	32.62	71.76
132.00	51.87	28.07	61.75	137.00	53.83	30.80	67.76
130.00	51.08	27.73	61.00	134.00	52.65	29.58	65.07
128.00	50.29	24.73	54.40	131.00	51.47	27.50	60.50
Mean: 135.16	53.12	29.00	63.80	142.03	55.81	33.06	72.73

SCHEDULE OF TESTS

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AGE OF 13				AGE OF 14			
cm.	in.	kilo.	lbs.	cm.	in.	kilo.	lbs.
156.00	61.30	45.91	101.00	164.00	64.45	51.27	112.79
153.00	60.12	42.73	94.00	161.00	63.27	48.89	107.55
150.00	58.95	40.26	88.57	158.00	62.09	45.91	101.00
147.00	57.77	38.41	84.50	155.00	60.91	45.98	101.15
144.00	56.59	35.05	77.11	152.00	59.73	43.13	94.88
141.00	55.41	34.09	74.99	149.00	58.85	41.42	91.12
138.00	54.23	31.14	68.46	146.00	57.37	38.07	83.75
135.00	53.05	29.54	64.98	143.00	56.19	35.05	77.11
Mean: 148.53	58.35	37.94	83.46	153.17	60.19	42.92	94.42
AGE OF 15				AGE OF 16			
162.00	63.66	53.18	116.99	164.00	64.44	54.48	119.85
160.00	62.87	49.45	108.79	162.00	63.66	52.36	115.19
158.00	62.08	48.49	106.67	160.00	62.87	53.50	117.70
156.00	61.30	47.05	103.51	158.00	62.08	50.40	110.88
154.00	60.51	45.34	99.74	156.00	61.30	50.00	110.00
152.00	59.73	45.00	99.00	154.00	60.51	49.09	107.99
150.00	58.94	44.09	96.99	152.00	59.73	46.82	103.00
148.00	58.15	40.60	89.32	150.00	58.94	45.55	100.11
Mean: 156.79	61.61	46.71	102.76	157.93	62.00	50.38	110.83
AGE OF 17				AGE OF 18			
165.00	64.83	57.95	127.49	166.00	65.23	55.45	121.99
163.00	64.04	53.64	118.00	164.00	64.44	53.18	116.99
161.00	63.26	50.15	110.30	162.00	63.66	51.06	112.33
159.00	62.47	49.85	109.67	160.00	62.87	50.85	111.87
157.00	61.96	50.45	110.99	158.00	62.08	48.96	107.71
155.00	60.90	48.49	106.67	156.00	61.30	48.82	107.40
153.00	60.11	50.23	110.50	154.00	60.51	47.84	105.24
151.00	59.33	48.49	106.67	152.00	59.73	46.70	102.74
Mean: 159.40	62.63	50.44	110.96	159.74	62.77	50.16	110.35
AGE OF 19				AGE OF 20			
166.00	65.23	55.60	122.32	166.00	65.23	56.99	125.37
164.00	64.44	55.91	123.00	164.00	64.44	53.64	118.00
162.00	63.66	54.09	118.99	162.00	63.66	52.05	114.51
160.00	62.87	50.91	112.00	160.00	62.87	51.82	114.00
158.00	62.08	50.45	110.99	158.00	62.08	51.88	114.13
156.00	61.30	50.09	110.19	156.00	61.30	51.14	112.50
154.00	60.51	46.14	101.50	154.00	60.51	50.45	110.99
152.00	59.73	44.85	98.67	152.00	59.73	45.00	99.00
Mean: 160.09	62.90	51.43	113.14	160.81	63.19	52.27	114.99

Lung capacity is often called *vital capacity*.¹ There is a distinct relation of vital capacity to weight. This relation is determined by dividing the vital capacity in cubic centimetres by the weight in kilograms. The ratio thus obtained shows whether the child's lung capacity is normal for his weight. It is called the *Vital Index*. Kotelmann has computed the normal vital index for the different ages (largely using age means, however). His table is as follows:

Age.....	9	10	11	12	13	14
Index.....	69.32	69.37	69.18	67.51	66.75	64.07
Age.....	15	16	17	18	19	20
Index.....	63.18	65.94	65.77	64.28	66.22	65.01

Professor Pyle has taken Smedley's norms of weight and vital capacity and computed the vital index in terms of the number of cubic centimetres of air capacity per pound of weight, by converting the weight in kilograms to pounds and dividing this weight in pounds into the vital capacity. "It will be noticed," he says, "that the girls show a falling off after the age of 11. This may be due to tight lacing." This is his table:

Age.....	6	7	8	9	10	11	12	13	14	15	16	17	18
Boys....	23	24	25	25	25	25	25	25	25	25	26	27	27
Girls....	22	23	23	23	23	23	22	21	20	20	20	20	20

¹ Cf. "Lung Capacity of Children." Spirometer Tests of 1,618 White School Children (751 Boys, 876 Girls) in the City of X. By C. W. Stiles and Floyd Graves. Published by the United States Public Health Service, Washington, D. C., October 15, 1915. The investigations of these two authors show a distinct difference in the development of the lung capacity of boys and girls of different ages.

In some cases the medical inspector may enter the result of a *general physical examination* first. His findings, or his observations made during the clinical tests, may suggest that the child be referred to specialists for more thorough examinations of vision, hearing, and other vital functions, including blood tests, etc. These should also be entered on this card.

Many schools have already established clinics in connection with their medical inspection work. It may be well to have a pathological laboratory within reach for the ready examination of the sputum, urine, fæces, and blood, and for the eventual application of the von Pirquet and Wassermann tests.

Much might be said here about the great importance of the development of the sexual function and of an examination of the genitals in cases where there seem to be mental, moral, and emotional disturbances. But reference to remarks in previous chapters, and in the "Medical Symposium" of this book will suffice.

(3) EDUCATIONAL TESTS

The material for the educational tests is spread over two cards.

EDUCATIONAL CLINIC

EDUCATIONAL TESTS

No.....Name.....Date.....

(A) VISUAL:

- * 1. *Distance*.....
- * 2. *Colors*: (a) Matching.....O = (b) Naming.....
- † 3. *Memory*: (a).....colors; (b).....objects; (c).....words

(B) AUDITORY:

- * 1. *Distance*.....O 2. *Location*.....
 O 3. *Character*.....O * 4. *Pitch*.....
 † 5. *Memory*: (a) *Single tone*.....(b).....*words*
 (c) *Word-Picture*: Primary.....*images*
 Elementary.....*images*
 Intermediate.....*images*
 Advanced.....*images*

(C) TACTILE:

- * O † 1. *Objects, large*.....
 * O † 2. *Objects, small*.....
 = 3. *Geometric forms*.....
 * 4. *Needle-points*.....

(D) SMELL: (* O †).....

(E) TASTE: (* O †).....

(F) MOTOR CO-ORDINATION: (*) Threading needles.....

(G) LOCATION: (* O).....(H) * BALANCE:.....

(I) TRAIN OF IDEAS: († O) *Hammer*.....*Book*.....*Mother*.....(J) IMITATION: (†) 1. *Movement*.....2. *Knox Test*.....3. *Peg-board*.....(K) CONCENTRATION: (†) 1. *Following*.....*directions* (.....*errors*)2. *Remembers*.....*momentarily exposed objects*.3. 100 A's, ...% *Time*.....(L) NAMING OF OBJECTS: (O) 1. *In room*.....2. *In pictures*.....

(M) LANGUAGE:

O = 1. *Tells story from pictures*.....= 2. *Writes reproduction of story told him*..... *Writes reproduction of story read by him*..... *Writes reproduction of story from memory*.....† = 3. *Completion test* (Thorndike).....out of 56 sentences.O † 4. *Ciphers. First order (rearrangement)*.....

Second order (numbers or letters).....

Third order (symbols).....

O * = 5. *Opposites*.....out of 40 given wordsO * = 6. *Classification*. 1. *Qualities*.....out of 21.2. *Activities*.....out of 22. 3. *Categories*

.....out of 15 (first set);out of 15 (second set).

- (N) READING: (* † =) 1. *Grade*..... 2. *Facility*.....
3. *Expression*..... 4. *Enunciation*.....
..... 5. *Understanding*.....
- (O) WRITING: (* † =) 1. *Own name*..... 2. *Copy from*.....
Reader. 3. *Dictation (Spelling)*.....
..... 4. *Composition*.....
- (P) NUMBER CONCEPT: (* O =) 1. *Counting*: (a) Counts to.....
(b) Counts backward 10 to 1.....; 100 to 1.....; (c) Counts
by twos to.....; (d) Backward by twos, 10 to 2.....; 20 to 2
.....; (e) By tens to.....; (f) Backward by tens, 100 to 10
.....; 1,000 to 10.....; (g) By fives to.....; (h) Backward
by fives, 25 to 5.....; 100 to 5.....; (i) By threes to.....;
(j) Backward by threes, 12 to 3.....; 99 to 3.....; (k) *Con-*
structing numbers on abacus.....; (l) Adding with dice.....;
(m) Adding and subtracting game.....
* O † 2. *Comparing unequal heaps of sticks*.....
* O † 3. *Comparing sticks of different lengths*.....
= 4. *Courtis tests*.....
O † 5. *Problem in judgment*.....
O † 6. *Magic square*..... * = 7. *Doyle test*.....
- (Q) DISCRIMINATION: (†) 1. *Matching pictures*.....
2. *Resisting suggestion in comparing lines (Binet)*.....
3. *Picture arrangement (Fraser)*.....
4. *Illusions*. (a) *Weights*..... (b) *Optical*.....
- (R) CONSTRUCTION: (* † O)
1. *Form-boards*:
(a) *Seguin's*..... Method..... Time.....
(b) *Healy's* 1..... Method..... Time.....
2..... Method..... Time.....
3..... Method..... Time.....
4..... Method..... Time.....
5..... Method..... Time.....
2. *Reconstructs pictures, No. of pieces*..... Time.....
Method.....
Cubes..... Time.....
Method.....
3. *100 Dots*..... Method..... Time.....
4. *Color cubes, copy design*..... Method..... Time.....
Original design..... Method..... Time.....
5. *Anchor puzzle*..... Method..... Time.....
6. *Building blocks*: (a) *Steps*..... (b) *Bridge*.... (c) *House*..
Method..... Time.....
7. *Construction of houses*: 1..... 2..... 3.....
Method..... Time.....
8. *Mechanical construction*.....

- (S) EXPRESSION: ($\dagger O =$) 1. Draws through ground glass.....
 2. *Draws man*.....Horse.....House.....
 3. *Draws pond with trees on opposite sides*.....
 4. *Draws illustration for story*.....
 5. Paints objects. (a) From model.....(b) Memory.....
 6. Paints landscape or still-life composition.....
 7. Models apple..... Vase..... Statuette.....
 8. *Sings*.....9. *Recites*.....

SUMMARY

1. Response (prompt, slow, halting, eager, indifferent, timid, sullen).....
2. Fatigue.....3. Effect of school training.....
4. Extent of individual experience.....
5. Period of development: 1. Infancy.....2. Primary.....
 3. Elementary.....4. Intermediate.....
 5. Advanced.....
6. Type (active, aggressive, inventive, passive, retiring, imitative, graphic, artistic, motor, constructive, scientific, mathematical, linguistic, literary, sensory, commercial, domestic, progressive, primitive, precocious, mediocre, psychopathic, backward, defective, mixed).....
7. Educational status.....
8. Suggestions for development and vocational guidance.....

Remark: A tentative distinction between tests of physiologic (*) and psychologic (†) function, individual experience (O) and effect of school training (=) has been suggested.

Tests printed in italics represent minimum requirements.

In these tests a tentative distinction has been made between tests of *physiologic* and *psychologic function*, of *individual experience*, and of the *effect of school training*. They are marked as indicated on the cards. Most tests represent, of course, a combination of these elements, but it has been thought helpful to the examiner to suggest these distinctions for the purpose of classifying his impressions.

It is unnecessary to discourse on the meaning of

physiologic and psychologic function. Individual experience is based upon native endowments and upon opportunities of environment. A bright child will observe and experience more than a dull child, and favorable or unfavorable home conditions—life in centres of civilization, or in the country; travel, companionship, and many other elements—will determine in a large measure the length of the radius of the circle which is covered by individual experience. Again, the effect of school training will depend upon the length and regularity of attendance, upon the personal influences of teachers and schoolmates, and upon the kind and character of the school the child has attended.

Some of these data will be obtained from the Child History information, and in a measure from the physical information. But much can be gained from a careful valuation of the response of the child to the tests themselves. In the final summary, a succinct statement of these facts should be given.

A. Visual Tests.—It is of the utmost importance, in testing a child, first to make absolutely sure that he is *in full possession of his sense-perceptions*, that his sense-organs function rightly. Deficiencies or irregularities in this field deprive the individual of the opportunity to gather accurate impressions of the outside world, and to learn from these experiences as they are mediated through the senses. As a matter of fact, our knowledge and our mental operations are bound up with sense-impressions, and are dependent upon them. “*Nihil est in intellectu quid non fuerit in sensu.*”

That school progress is closely interrelated with clear sense-perception needs hardly to be discussed. Be the instruction oral or from text-books, it can reach the

mind only through the sense-channel. Even the value of any mental tests, be they what they may, becomes doubtful unless the examiner first convinces himself that the child can *see* the things he is being tested with; can *hear* distinctly and with understanding what the examiner says, and has sufficiently accurate percepts otherwise of the subjects comprised in the examination. If such preliminary tests are not made, the examiner lays himself open to grave errors in diagnosis.

The blind child, also the child whose vision is merely impaired, cannot possibly receive the benefit of visual object-teaching, of pictures, or of the printed page. In the present time, visual impressions comprise the vast majority of all mental stimuli, and they are far more varied than any other sense-impressions.

The *visualization of problems*, quite apart from the perception of objects and their qualities, is a mental element of no mean importance. Judgment will depend in a large measure upon the power of visualization. (Cf. p. 126.) It enables the individual to grasp a situation, to get the perspective of things, to choose his path. Take, for instance, a test in this series, under *P*, 5, "Problem in Judgment." The problem the author uses is the following: Imagine a short line of boys, or soldiers, marching in single file. Two are marching in front of one; two are marching behind one, and one is in the middle. How many boys (or soldiers)? Unless the child visualizes the situation accurately, he will fail to find the right answer: Three.

It will be seen that a majority of all tests require accuracy of vision as a "conditio sine qua non." The threading of needles, the imitation and concentration tests, the discrimination tests, the form-board tests, etc.,

In the educational clinic, sense tests can be made only in the rough, so to speak. It is not the function of an educational clinic to transgress into the field of exact physiological and medical measurement and diagnosis. But it can and must ascertain the general faculty of sense-perception and discrimination, and detect danger-signals. The educational clinic will instantly refer the child to the medical specialist, who will examine the child with reference to the suspected defects, and only after his diagnosis is made and recorded should the educational examination proceed.

DR. ROBERT'S KINDERGARTEN TEST CARD

100 symbols arranged in a 10x10 grid:

- Row 1: Dog (standing), Horse (standing), Cat (sitting), Circle (empty), Flag (American), Star (five-pointed), Scissors (open), Square (empty), Triangle (empty), Circle (empty).
- Row 2: Circle (empty), Flag (American), Star (five-pointed), Scissors (open), Square (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty).
- Row 3: Square (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty).
- Row 4: Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty).
- Row 5: Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty).
- Row 6: Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty).
- Row 7: Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty).
- Row 8: Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty).
- Row 9: Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty).
- Row 10: Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty), Triangle (empty), Circle (empty), Circle (empty).

FIG. 13.
Doctor Reber's kindergarten chart.

by the McIntyre, Magee and Brown Co.) of which he says:

The chief points in the construction of any object test-card are that (1) it shall consist of objects readily recognized by little children; (2) the objects should conform as nearly as possible to the accepted scientific standard by subtending the correct angle for a distance of 6 metres. I doubt whether an absolutely scientific object test-card, in the sense just mentioned, will ever be constructed. In the very nature of things they will have to be approximations. . . . The first three objects (the dog, the horse, and the cat) are of value because they are almost immediately recognized by even very young children. . . . The remainder of the objects figured lend themselves more completely to the correct angular construction. The circle or ring is of value in estimating spherical errors. The flag and window are of value in indicating some variety of rectangular astigmatism, while objects like the star, the scissors, and the gate are of value in the indications they give as to some form of oblique astigmatism. Such objects as the hat, the hammer, the hand, and the cup are far from being scientifically satisfactory, but some objects must be introduced for variation and these have been found to serve fairly well.

Where a difficulty is found in the identification of these objects (this difficulty may be a mental one), it is well to employ still simpler methods of determining the physiologic function. The *E-fork test* was invented by the late Professor Herrmann Cohn, of Breslau, the pioneer in testing the eyes of school children. It presents the capital letter E in various positions, which can be indicated by the child with the use of a large pasteboard form of the letter, resembling a fork with three prongs.

A few years ago the *McCallie Vision Tests* (published by Edwin Fitzgeorge, Trenton, N. J.) have been brought into the market. The *illiterate set* of these cards are an inexpensive substitute for the Cohn test, representing a

boy, a girl, and a bear, playing hoop-ball; the ball is seen in different hoops and the child can state in which he sees it.

Children who know their letters can be tested with the ordinary *Snellen* test-cards, which are known to

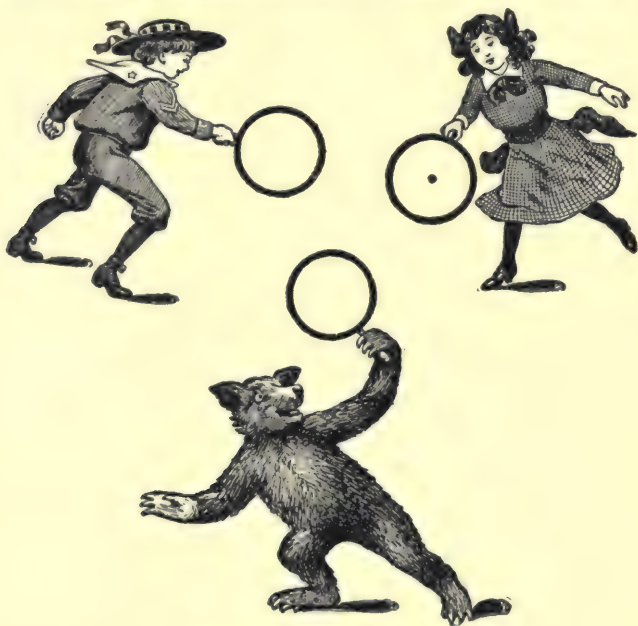


FIG. 14.
McCallie's illiterate vision test.

every one; or with the "*literate set*" of the McCallie cards. In all cases great care must be taken to have proper illumination and to be sure of the distance from which the characters are recognized. Guard against guessing on the part of the child. Each eye must be tested separately, the vision of the other eye being ob-

structed. Any difficulty or inequality in vision should lead the examiner to a closer scrutiny of the child's visual power, which can be tested only with the proper instruments and by an expert oculist. Avoid the seller of glasses!

Color Perception.—The next test refers to color perception. It consists of two parts. The first one merely tests the *physiologic function of color perception and discrimination*, without requiring the naming of the color. This test will lead to the detection of possible *color-blindness* which, if present, would naturally confuse the child's ability to name a color rightly. The test is made by having the child *match* colors; first the six primary colors: red, orange, yellow, green, blue, and violet; secondly, a selection of tints and shades of these; and perhaps some intermediates and neutrals. Black and white may be added if desired. For this test we may use either colored worsted, the strands of which should be mixed up for the child to assort; or colored papers of any standard series. The author uses the sample book of the Prang series. The colored papers measure 1 x 4 inches. These are pasted upon white (or neutral-colored) cards, 3 x 5 (the standard library record card), and are then cut in half, thus producing two pieces which can be matched together.

Naming colors correctly depends in a large measure upon a child's opportunity of individual experience and school training. If in spite of such opportunity and of the integrity of his physiologic function the child fails to name colors correctly, there is clear evidence of mental impairment in this field.

Visual Memory.—The third visual test is a test of memory. This, like the test of aural memory described

later, is of the utmost significance in determining the causes of a child's backwardness and failure in school. The psychologic function which we call memory is not in itself an intellectual quality. It has distinct physiologic elements and is otherwise in the nature of a psychic mechanism.¹ In not a few cases a good memory is found in persons manifestly inferior in intellect, while it is frequently weak in persons of high intelligence, at least along certain lines. A distinction is often made between a *mechanical* and a *logical memory*. It may be said, however, that the justification is doubtful. All memory is essentially "mechanical." Where there is no logical mind to make the proper use of this tool, memory work will retain its mechanical elements in an unarticulated form. When, however, a rational mind controls the memory mechanism, it is elevated into a sensible thing and becomes a powerful machinery for mental development. It is, of course, possible to imagine that such a mind may neglect to make the best use of this memory tool; or the tool, in its physiologic aspect, or in its psychologic development, may be defective. Then we have the good mind unassisted by memory, and losing much of its efficiency through the absence of the tool. "To remember" implies the mental faculty of raising stored-up impressions across the threshold of consciousness. Various conditions affect this power.

In these tests we wish to determine primarily the degree of efficiency which the mind has achieved in using the memory tool at the time of the examination. In a measure these memory tests are also tests of *attention*. Group *K* of this schedule of tests has, however,

¹ Cf. p. 150.

special reference to the power of the child to concentrate, and should be utilized to check off the results obtained here. Attention enters into so many other tests, for that matter, that all our observations will furnish a composite picture of this fundamental quality of mental activity.¹

Three tests are applied for visual memory. For the first of these the author uses wooden *balls painted in the primary colors*; of course balls of any other material, or colored papers, may be substituted, really any other colored objects, *provided* that the purpose of the test, viz., to emphasize *color*, not the form or character of the object, is kept in mind. For this reason simple balls or papers are preferable.

For the second test a number of *familiar objects* are used: ball, book, chalk, fork, knife, spoon, napkin, hammer, bottle, paper, key, ruler, etc. In this test the *object itself* must be remembered.

The *method of presentation* is as follows:

The child is placed at a suitable distance from a table on which there is a dark screen behind which the *colors* or *objects* are hidden. They are exposed momentarily in sets of increasing number: 2, 3, 4, 5, 7, and more. The child is asked to repeat the names of the colors, or of the objects, *in the order in which they were presented*, and is warned not to begin until all the colors or objects of the series have been exposed, and until the examiner *tells* the child to begin. It is allowable to repeat a number-series, provided new colors, or

¹ Power of attention and concentration, as well as the exercise of all other physiologic, psychologic, and mental functions, depend so much upon the child's nerve force and endurance that the element of *fatigue* must be reckoned with. More will be said on this point when the final *summary* will be discussed.

objects, or a new arrangement or sequence are substituted. For example: If a child cannot repeat the three-series red, blue, yellow, a second test with three colors may be given, like orange, green, violet. Likewise with objects. The purpose of this repetition is to set the child at ease. Often he will fail at first, owing to the strangeness of the task, and we should give him the benefit of the doubt. The repetition also shows the child's ability to profit from experience. Let us remember that *the purpose of these tests is not to establish standards, but to understand an individual child.*

We may even construct, with a small number of colors and objects, longer series, of 10, 15, 20 and more units, if needs be, by rearranging the units and repeating individual units at different places. Thus, a series like this may be presented: Knife, hammer, paper, ball, chalk, hammer, book, fork, knife, spoon, bottle, paper, key, ruler, napkin. Long series like these, if remembered, would indicate an unusual power of visual memory. The examiner must be prepared to meet any kind of child mind.

The first of these memory tests naturally presupposes the child's ability, as previously determined, to distinguish and name colors. The objects are so well known to every child that their identification should be easy, unless we are dealing with a low defective. This test is therefore related to Group *L* of this schedule.

The third test for visual memory is the *reading of words*, from cards on which one word each is printed, and which are exposed in the same manner in which the colors and the objects were exposed. This test applies only to children who can read. While it is principally a memory test, it will allow of conclusions regarding the

quick identification of words. The words are printed in clear, bold type, three inches high (so that there can be no trouble about seeing them accurately with fairly normal power of vision), on pieces of stiff cardboard, about 5 x 10. The following sets have been selected (the words in *italic* are printed in *red*):

(1) Cow, room, *ship*, queen, hammer; (2) road, glass, board, *bell*, pencil, water; (3) garden, stone, *grass*, dog, bottle, hill, wall; (4) house, *statue*, paint, ink, *door*, picture, cloud, tree; (5) paper, roof, sky, *pen*, leaf, hammer, cow, *ship*, bottle, *door*.

All that was said before in relation to the handling of colors and objects in presentation holds good with the use of the words.

Any confusion in the order of the colors, objects, or words presented, or any incompleteness of the series given, especially after several tests, would prove that the child is weak in visual memory to the degree indicated by the series used. Such a weakness will naturally prevent a child from profiting from his lessons and experiences, as these cannot be retained, and if retained are not stored away in the mind in the proper sequence and order. In a number of cases *the very same exercises which are here used as tests may be applied in school for the training of the memory faculty*, which can be trained in most of us by the patient application of the proper methods.

Unrelated words and objects are used here to eliminate entirely the action of judgment from this test of mechanical memory.

B. Auditory Tests.—While it is relatively easy to detect disturbances in the province of vision (except

color-blindness) even without special testing, and to understand the consequences of impaired vision in the matter of learning and of intellectual progress, the child who is hard of hearing is not so easily discovered as suffering from this specific sense defect. This is owing to the fact that the partially deaf child has learned to rely upon his eyesight and his other sense-impressions for conveying messages to him, and the art of lip-reading comes to him almost unconsciously. The child himself has rarely an idea of his defect, but thinks that his method of getting information from what other people perceive as "sound" is perfectly natural. He has no standard of comparison. And inasmuch as he *seems* to hear, his parents and teachers do not realize the fact of his difficulty. Sometimes, when he does not see the lips of the one to whom he appears to listen (as when it is dark, or the speaker has his face averted), or when his other substitute sense-impressions fail him, he does not "hear," and is then suspected, not of a physical defect, but of inattention, even of disobedience and perversion.

The author had a little boy (**Case 65**) under examination in his clinic recently who was a member of a special class and had made no progress for years although he looked bright. His tests indicated intelligent judgment in many ways. He was thought to be "a little" hard of hearing—so much had been found out; but when the child was discovered to be unable to hear the examiner's voice, blindfolded, at the distance of only one foot from either ear, his teacher raised her hands in amazement, never having suspected that "it was as bad as that."

In order to impress his readers with the very great

importance of auditory tests, the author will once more refer to Arno Müller's investigation on hardness of hearing as the cause of apparent alexia and agraphia, quoted on pages 144 *ff.*

Auditory test 1 refers to the *distance* over which a child can hear. He is either blindfolded or placed with his face away from the examiner. The examiner tests each ear separately (the other ear being covered with the hollow hand, either of the child himself or of an accompanying teacher or assistant, or closed with cotton), saying easy words or sentences for the child to repeat, from varying distances, first in the ordinary tone of voice, then in a whisper, taking care to articulate carefully. Even the whisper should be heard with normal power of hearing across a room of ordinary size, everything being quiet. Every diminution of hearing power gives rise to the suspicion of functional defect and calls for expert examination.

For tests 2, 3, and 4 the child is blindfolded. At varying distances from the child, different noises and sounds are produced: Scratching, tapping wood or metal, striking of a bell, whistling, etc., with varying degrees of loudness. The child is expected to *identify* the *nature* of the sound and the *place* or *direction* whence it comes. Grave errors are danger-signals.

For test 4 the author uses a simple "piano" from the ten-cent store. The child is asked to state whether one tone is higher or lower than the one previously struck. While there is a physiologic element in this test, its result also depends upon experience and training. Sometimes the nature of the test will have to be explained to the child before he can be justly graded as normal or defective in perceiving *pitch*.

The same simple instrument is used for test 5 (a). One tone is taken as the basis of the experiment. It is struck several times and the child (blindfolded) is asked to remember it carefully. Then another, much higher or lower tone is sounded. The child is asked, "Is this the same tone?" Next, the experimenter goes back to the basic tone for identification. Two or more, also less widely different tones are struck next, before the original tone is repeated. In another form of the experiment the child is asked to find the basic tone by striking the keys with the little hammer himself until he finds it, if he does at all. The object is to detect how reliable the child's faculty is to *identify a given tone*. The result is interesting for determining whether the child has a "musical ear"; if he has, it may become a valuable asset.

For test 5 (b) the same sets of *words* are used which we had in the visual-memory test. Here the words are *pronounced* slowly and carefully to ascertain the aural-memory span and accuracy of retention. What has been said about method and significance of the visual test with words is applicable here, with the modification conditioned by the use of another sense.

Test 5 (c) introduces a number of graded selections to be read slowly to the child, once, twice, even three times. The child is then requested to repeat the selection, and the number of memories is noted down. Each selection contains a certain increasing *number of memories* (in the reproduction below they are separated by dashes), and the child should normally retain at least 50 per cent of the total number to represent the period. The selections are called "*word pictures*," as they are so chosen that they may call forth in the child's mind

very distinct mental images. These images *may* be visualized; but the avenue of perception is sound.

The reproduction may be oral or in writing.

The series is so arranged that there is an advance from one period to another, in the matter of difficulty, language, content, interest, etc.

For the *Primary Period* the following selections are used, in the order given here:

(1) SNOWING

Katie / likes to see it snow. / She has a little sled. / She takes the sled / to the top of the hill / and gets on it. / Then she rides down the hill / as fast as she can go. / As she goes down the hill / she sings: /

“Old woman, old woman, old woman / so high, /
You are picking your geese, / the white feathers fly.”
(14 memories.)

(2) PLAYING HOUSEKEEPING

(This selection is used preferably for girls)

Little Kate / is playing housekeeping. / She likes to think / that she is a little mother. / The dolls / are in the playhouse. /

The little baby doll / has on a white bib. / Kate gives her mush / out of a brown pitcher. / The big doll / sits up / and has a crust of bread / in her hand / which Kate has given her to eat. /

Kate says: / “I must now dust / the chairs / in your house, / dear dollies. / I must scrub the house, too. /

“Now it is time for me to dress my dolls. / I will brush their hair. / I will put the blue dress / on big Fannie. / Little Bess / will look fine in pink.”

(27 memories.)

(3) IN THE BARN

(This is a boy's selection)

When it is raining / we cannot play / under the trees. / We then go to the barn. / There are many things to see / in grandfather's barn. /

There is the old horse / standing in his stall / eating hay. /
A white hen / is sitting on her nest / in the loft. / Ned / set
her on ten white eggs. / The little chicks / will come out / of
the egg-shells. /

The black hen / has her nest / under the pig-pen. / It is
hidden / in the leaves / so you cannot find it. / In this nest
there are six eggs. /

Ned keeps the cows / in a stall / under the shed. / They will
give us good milk. / There are many mice / and rats / in grand-
father's barn.

(31 memories.)

For the following periods one selection only is pre-
sented for each.

Elementary Period:

TRUSTY HELPERS

Man / has many good helpers / among the animals, / but
there are only two / that can be trusted / to do their work
alone. / These two are the dog / and the elephant. /

Books have been written / about dogs / and the wonderful
things they have done. / They run errands / and care for sheep /
and cattle. / They rescue / travellers / who have been lost in
the snow. / and do no end of strange things. /

The elephant, too, / has been taught / to do many wonderful
things. / He is so strong / that he can carry heavy loads. / He
is so gentle / that little children have been left in his care. /
He is so trusty / and faithful / as to be a model for all.

(28 memories.)

Intermediate Period:

PLOUGHING

All day long / the ploughmen / on their prairie farms / have
moved to and fro / on the wide, level field / through the fall-
ing snow / which melted as it fell, / wetting them to the skin /
—all day, notwithstanding / the frequent squalls of snow, /
the dripping, desolate clouds, / and the muck of the furrows, /
black / and tenacious / as tar. /

Under their dripping harness / the horses / swung to and fro / silently, / with that marvellous, / uncomplaining patience / which marks the horse. / The ploughman behind his plough, / though the snow lay / on his ragged greatcoat, / and the cold, / clinging mud / rose on his heavy boots, / whistled / in the very beard of the gale. /

As the day passed / the snow, / ceasing to melt, / lay along the ploughed land / and lodged in the depth of the stubble, / till on each slow round / the last furrow / stood out black / and shining as jet / between the ploughed land / and the gray stubble.

(41 memories.)

Advanced Period:

EARLY DUTCH FIREPLACE SCENE

To have seen a numerous household / assembled round the fire, / one would have imagined / that he was transported / back to those happy days / of primeval simplicity / which fleet before our imaginations / like golden visions. / The whole family, / old and young, / master and servant, / black and white; / nay, even the very cat / and dog / enjoyed a community of privilege, / and each had a right / to a corner. / Here the old burgher / would sit in perfect silence, / puffing his pipe, / looking in the fire / with half-shut eyes, / and thinking of nothing / for hours together; / the good wife, / on the opposite side, / would employ herself diligently / in spinning yarn / or knitting stockings, / listening / with breathless attention / to some old crone of a negro / who was the oracle of the family, / and who, perched like a raven / in the corner of the chimney, / would creak forth, / for a long winter afternoon, / a string of incredible stories / about New England witches, / grisly ghosts, / horses without heads, / and hairbreadth escapes / and bloody encounters / among the Indians.

(44 memories.)

Caution must be exercised not to value the returns to these tests for anything else but *aural memory*, which may be purely mechanical. They are not intended as

tests of an intelligent understanding of the text presented, at least not primarily so. The examiner may find that the child, in reproducing the word picture, will so word it that it is not merely a mechanical account but a testimony to his understanding as well. In this case the test under *M*, 2, will be superfluous.

C. Tactile Tests.—The purpose of the tactile tests is to ascertain to what extent the child has the ability to discern objects *through touch alone*. The result depends, of course, first upon the *physiologic integrity of the child's tactile sense*; second, upon his *psychologic faculty of interpreting percepts*; and thirdly, upon the *degree and extent of his experience*. Schooling and instruction enter more particularly into the differentiation of geometric form. Naturally mental ability as such is also a factor, but it is not the one which is primarily tested in this set of tests. However, in the event a child fails to respond properly in this field, the suspicion is justified that the underlying cause is a brain defect. The further tests in concentration, judgment, discrimination, etc., will reveal the mental defect if it should exist; if this is not made evident by those further tests, the conclusion is justified that failure in sense-perception is due to imperfection in the sensory apparatus.

In making the tests the child is either blindfolded or simply turned with his face away from the experimenter. With his hands held open behind his back the child is invited to enjoy a "guessing game" by having placed in his hands various objects, such as a ball, large key, shoe, paper, various goods (wool, silk, cotton, sand-paper, etc.), and other things. In the second series we introduce smaller objects: pocket-knife, pen-points, small

keys, marbles, nails, etc., also a greater variety of fabrics. The geometric forms of the third series should consist of cubes of various sizes, small balls, cylinders, prisms, as well as flat forms (squares, circles, triangles, ovals).

Tactile test 4, which is essentially physiologic, is made with the help of a simple piece of apparatus. Use ordinary large bottle corks, up to $2\frac{1}{2}$ inches in diameter, and drive into them, point downward, large sewing-needles at different distances from one another (from 2 inches down to $\frac{1}{8}$ inch), and have one with a single point. Care must be taken that the double needle-points are on a level.

With the child blindfolded touch various body areas (palm and back of hand, wrists, other parts of the arm, neck, face, etc.) to ascertain whether the correct number of points, one or two, is perceived. The back of the hand is naturally duller in tactile perception than the palm, and so there are other natural differences. Nevertheless, surprises are in store for the experimenter, who must not lose sight of the fact that the child may be the victim of self-suggestion in some of his answers. In this test we cannot expect to state minute results—that is not the function of an educational clinic. All we can expect to do is to find whether there is a large degree of insensibility to tactile impressions (anæsthesia), or an exaggerated sense of touch with the immediate ability to make fine distinctions.

D. Sense of Smell.—For short examinations the testing of the senses of smell and taste may be omitted, except in cases where the major senses, sight, hearing, and feeling, seem inoperative and, therefore, the minor senses, so called, have to assume the functions of the

major, as far as possible. It may, however, be surprising to observers how much the keenness of the minor senses varies in different individuals, and how often children of underdeveloped mentality suffer from a dulness in these spheres which contributes to the meagreness of their sense-impressions. Yet out of these sense-impressions their conceptual world is to be constructed.

Few of us are conscious how much the sense of smell contributes to our conceptual world, and how distinctly it affects even our emotional states. Dulness of this sense is therefore disadvantageous to the otherwise efficient and normal individual no less than to the one who is already handicapped in other directions.¹

The series of smelling tests comprises, first, the *identification of simple and familiar odors*, like that of soap, vinegar, coffee, cocoa, flowers, fresh bread, perfumes, etc. For *acuteness*, graded extracts of musk, violet, orange, vinegar, etc., are used, varying between 10 per cent and 100 per cent of strength. They are prepared with pure alcohol as a solvent.

Dulness of sense is always a danger-signal. Olfactory dulness may be indicative of catarrhal conditions of nose and throat.

¹ While civilized man relies mostly upon the senses of vision and hearing, savage peoples make use of the keenness of their sense of smell in a number of ways. Alexander von Humboldt, many years ago, reported that the Indians of Peru can follow the trail of animals or of enemies by scent as well as any dog. Modern examples of similar observations are numerous. If we now consider that some of our difficult children represent a primitive type we may be warned that keenness of their sense of smell may not only be symptomatic, but also very useful to them if they are less gifted in seeing and hearing. It can often be observed that children of "impaired mentality" have the tendency to "smell" everything they handle.

E. Sense of Taste.—Like the sense of smell, gustatory sensations depend, first, upon the functional integrity of the sense-organ, the tongue. Catarrhal and digestive conditions may coat the tongue and impair its function. But it is plain that the elements of experience and of training enter very largely into the identification and naming of impressions.

Elementary tests determine the child's ability to *recognize* the taste of sugar, salt, chocolate, bread, fruits, vinegar, etc. For the graduated tests for *acuteness* use graduated solutions (in distilled water) of sugar, salt, vinegar, and quinine, varying between 10 per cent and 100 per cent of strength. Mark first traces of sweet, salt, sour, bitter.

For both the smell and the taste tests the child is blindfolded.

F. Motor Co-ordination.—This test would seem to be merely one of physiologic function. An element of judgment, however, is infused by placing before the child not only a graded series of needles, but also threads of different degrees of fineness or coarseness, so that he must *choose* the one which can be used best in threading a certain needle. Children of weak judgment will try forever to fit a shoestring into an ordinary darning-needle, or put a cotton thread into the biggest eye or eyelet of the selection—not for a moment considering the use of the right size.

The larger “needles” used in this test are in reality pieces of iron or steel, about four inches long, round in shape, with correspondingly large openings at one end. The largest is an iron bar $\frac{3}{8}$ of an inch in diameter; the smallest one of $\frac{1}{8}$ inch diameter. Shoestrings or cord are used for threading them.

For these a cheap and fully satisfactory substitute are bodkins for various widths of ribbon or tape.

Then we use a series of real needles, beginning with a large darning-needle, down to a fine sewing-needle. Cotton and silk thread of various sizes are used for threading.

Observation of the manner in which the children handle the cube, pegs, insets, etc., in the other tests will give further clues to the degree of their motor co-ordination.

G. Sense of Location.—The sense of location depends upon proper physiologic function coupled with sufficient individual experience. It is not well defined in psychologic experiment and terminology, but has a practical bearing upon a child's ability to locate himself in space. The *muscular sense*, while now recognized as a specific sense, is also still vague in its actual operation. If the Rolandic area (p. 135) is the seat of motor memories, we may find in it a centre for the ability of an individual to locate himself.

This activity requires attention in a system of tests, as it determines much of a child's practical self-direction or helplessness.

First Test: Examiner points out some object in room. Then blindfolds child and asks him to walk toward object.

Second Test: Have child walk several times with eyes open from door to window (or any other similar task), taking care that the path chosen is not direct but winding and roundabout; then blindfold him and have him retrace his steps in this manner (muscular memory).

H. Balance.—For tests of *balance* use these:

1. Child to walk along straight line (marked on floor as plainly as possible).

2. Standing in Romberg position (feet extended straight forward and put close together, eyes closed).

Disturbances in the static apparatus (in the inner ear) are the result of local disease, or indicate other nervous handicaps. They are often connected with impairment of the visual apparatus. A child having such disturbance will sway and fall when walking along a straight line in the manner described in the test; and he will almost immediately fall forward when standing in Romberg position.

I. Train of Ideas.—This test is intended to sound, in a measure, the child's power of association, and also to discover his trend of thought. Prevalent mental and moral tendencies may be revealed.

The words selected as guide words are *hammer*, *book*, and *mother*. They represent *three circles of experience*: the child's *activities* and human *occupations* in general; the *school circle*, and the *home circle*.

The examiner will ask the child to listen carefully to the word which he will pronounce, and then to tell whatever other words or thoughts come into his mind after hearing the word. It may be necessary to explain the meaning of the direction several times, so as to be sure to have the child understand, as otherwise the purpose of the test would be vitiated. Only as many words are recorded as can be given within three minutes. The words may either be dictated to the examiner or written down by the child.

While the *number* of associated ideas counts for some-

thing, the main object is to obtain the associations themselves. They may give a clew to the individuality and to the individual needs of a child. A mere enumeration of words, without associated ideas, would indicate dulness of conception; if a child, as the author's records show, gives a series of words which rhyme, or have the same phonetic elements, or belong to the same orthographic type, the association would be of a nature to emphasize the child's scholastic interest. (*Cf.* p. 258.)

Here is the record of a peculiar case (**Case 67**), which throws light upon the life conditions of the boy under observation. He is a little Italian boy with insanity in the family history. This is what he said when the word "mother" was given: "Italian—makes me sorry—makes me think—I feel bad—I ain't got good care—I just have the same blood." His father is living, but his mother died in an insane asylum. The father is a tailor, very poor. Armando is one of sixteen children, all of whom died in infancy, except four boys; one brother, quite "smart," died at the age of 22, insane. The little boy has hardly any care. It is easy to draw interesting conclusions without knowing much else about the child's mentality.

The case illustrates the necessity of making the directions elastic, and not insisting upon "words," or "nouns" only.

J. Imitation.—Imitation is one of the earliest and most fundamental faculties developing in the child. It is distinctly psychologic in character and combines readily with other mental operations, so readily, indeed, that a purely imitative act is hardly ever observable after earliest childhood. Pure imitation would be al-

most reflex in character. An imitative act requires *attention* to the act to be imitated, and concentration upon its details. There must be a certain amount of rational judgment to discriminate between the more or less essential elements of the act to be imitated, so as to make the imitation perfect.

First Test: Movement.—The first test consists in asking the child to imitate a certain movement, like swinging your arms in a particular manner, or going through a short series of calisthenic exercises. The degree of accuracy in the reproduction of this movement will be an index of the child's ability to observe and imitate. Of course, it implies a test in motor co-ordination.

Second Test: The Knox Cubes.—The Knox Test is one of those employed at Ellis Island for the testing of immigrants suspected of mental defect. It is described by its inventor, Doctor Howard A. Knox, of the United States Public Health Service, as follows:

Four 1-inch cubes, 4 inches apart, are fastened to a piece of thin boarding. The movements and tapping are done with a smaller cube. The operator moves the cube from left to right, facing the subject, and after completing each movement, the latter is asked to do likewise. Line (*a*) is tried first, then (*b*), and so on to (*e*). Three trials are given if necessary on lines (*a*), (*b*), (*c*), and (*d*), and five trials if needed on line (*e*). To obtain the correct perspective the subject should be two feet from the cubes. The movements of the operator should be slow and deliberate.¹

If the cubes are numbered 1 (red), 2 (blue), 3 (green),

¹"A Scale, Based on the Work at Ellis Island, for Estimating Mental Defect." *The Journal of the American Medical Association*, March 7, 1914.

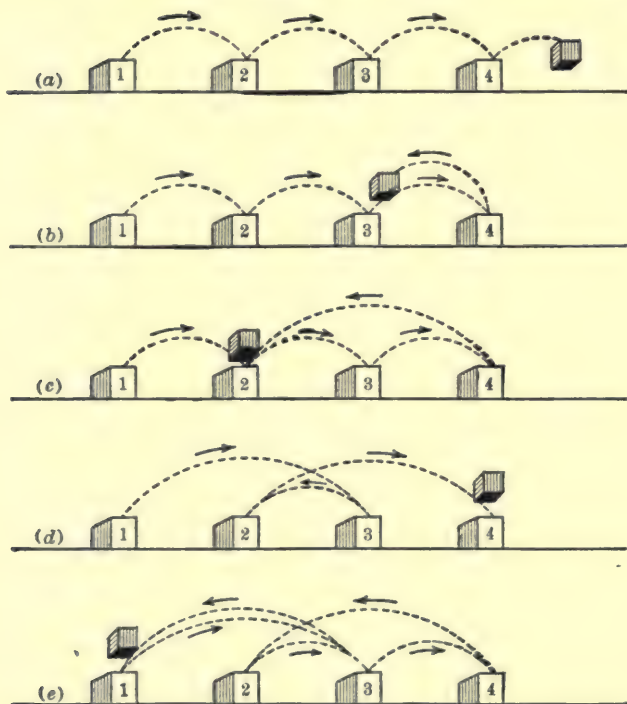


FIG. 15.
The Knox cube test.

and 4 (yellow), respectively, the movements are as follows:

(a) Touching the four cubes successively with the small cube, then putting the small cube down on the table.

(b) Touching the four cubes successively, then going back to cube 3, then down.

(c) Touching the four cubes successively, then back to 2, then down.

(d) From 1 to 3, back to 2, then to 4, then down.

(e) From 1 to 3, to 4, back to 2, to 3, back to 1, then down.

The author is using larger cubes, two inches, natural wood only, and does not have them fastened to any board. There seems to be no special value in the size or color of the cubes, or their distance from one another, as long as they are distinct enough from one another to be recognized as separate entities. In fact, one of the special advantages of this nice test is its adaptability to any emergency. Instead of cubes the author has used visiting-cards, playing-cards, or anything else handy that lent itself to the following out of the proper movements.

Using the Binet method of grading, Doctor Knox puts the ability to do test (*a*) under the age of 4 years; test (*b*) under 5 years; test (*c*) under 6 years; test (*d*) under 8 years; test (*e*) under 11 years, the years representing the normal age at which he thinks the test can be performed. He uses the following table of grading "mental age":

Age At or Over	Mental Development Years	Classification
6	Practically none	Low-grade idiots
6	1	High-grade idiots
8	2	Low-grade imbeciles
10	2-4	Middle-grade imbeciles
12	4-6	High-grade imbeciles
12	6-8	Low-grade morons
14	8-10	High-grade morons

According to this schedule, normality would be indicated by performing all five tests successfully. As a matter of fact, the author has found children of otherwise rather low ability to perform all five tests with relative ease, and intelligent adults who stumbled over the fourth. Nevertheless, the test is very valuable

when taken in connection with the other tests. In testing adults of ordinary intelligence we must never forget that they lack the unsuspecting nature of the child; they will anticipate being caught in a trick in which the apparently unessential plays a part.

Third Test: Peg-Board.—This test is related to those Binet Tests which require the drawing of a square and a diamond. It has been empirically found that the drawing of a diagonal requires a higher development than the drawing of a horizontal or vertical line, whatever the cause may be. Binet puts the drawing of a square under the "mental age" of 6; the drawing of a "diamond" one year higher, 7. Instead of the drawing the author employs a large peg-board, which gives opportunity for an easier motor adjustment and at the same time serves the purpose of discovering the child's mental development. It has been found that the inability to imitate the "pegging" of a diagonal, or of a parallel to the diagonal, or the making of a diagonal from direction, is a strong indication of mental underdevelopment, whatever the cause may be.

This exercise has been placed under "imitation," feeling that it involves this kind of mental activity primarily, while it may be based upon visual conception causally.

K. Concentration.—The tests enumerated under this heading require close attention to be given by the child, and the first two presuppose a certain degree of memory power. These two will therefore add further data to the memory quality of the child's mind.

Following Directions.—The Binet Tests require for the "mental age" of 6 the performance of three commis-

sions given simultaneously. The author finds that it is well to grade the performance of commissions by beginning with one, and then trying longer series. Thus, to a younger child, or one whose power we do not feel able to conjecture, we give just one commission, as: "Hand me the book from the table!" or "Open the door!" and observe with what promptness and success it is carried out. The second step involves two different actions successively, *e. g.*, locking the door and bringing you the key, or raising arms over head and lowering them behind the back. The number of commissions thus given can be increased, even to five, six, or seven and more. The author has had subjects carry out a dozen and more commissions without a single mistake. The success with which they are carried out is a fair measure of the ability of the subject to *concentrate*—not necessarily of anything else. It is interesting to note, however, that children whose visual and auditory memory (pp. 300 and 307 *ff.*) was limited, were often surprisingly successful in holding a long series of simultaneous directions in their minds.

It is easy to see that this test is not one to require a special time. It may well be combined with other tests. In other words, the success with which a child carries out the directions and instructions required to perform other tests, if they involve a sequence of activities following one simultaneous direction, may well be recorded in this place, making a separate test superfluous.

Remembering Objects.—The second test here suggested is not identical with the test for visual memory, as under A, 3 (b), as might be suspected at first glance. In the visual-memory test the objects are shown successively. In this test they are exposed *simultaneously*.

A certain number of familiar objects, three, five, or more, are arranged on a table while the child is not looking, or behind a screen, or under a cloth. These

OYKFIUDBHTAGDAACDIXAMRPAGQZTAACVAOWLYX
 WABBTHJJANEEFAAMEAACBSVSKALLPHANRNPKAZF
 YRQAQEAXJUDFOIMWZSAUCGVAOBMAYDYAAZJDAL
 JACINEVBGAOFHARPVEJCTQZAPJLEIQWNAHRBUAS
 SNZMWAAAWHACAXHXQAXTDPUTYGSKGRKVLGKIM
 FUOFAAKYFGTMBLYZIJAAVAUAACXDTV DACJSIU FMO
 TXWAMQEAKHAOPXZWCAIRBRZNSOQAQLMDGUSGB
 AKNAAPLPAAAHYOA EKLNVFARJAEHNPWIBAYAQRK
 UPDSHAAQGGHTAMZAQGMTPNURQNAIJEOWYCREJD
 UOLJCCA KSZAUAFERFAWAFZAWXBAAAVHAMBATAD
 KVSTVNAPLILAOXYSJUOVYIVPAAPSDNLKRQAAOJLE
 GAAQYEMP AZNTIBXGAIMRUSAWZAZWQAMOBDNAJZ
 ECNABAHGDVSVFTCLAYKUKCWA FRWHTQYAFAAAOH

Name

Time in seconds

Columbia University Experiment Form.]

FIG. 16.

The one hundred A's test. Test in concentration.

objects are then momentarily exposed and the child asked how many and which he can remember. There is here no need of insisting upon a certain order. What is being tested is the rapid concentration of attention.

Test of 100 A's.—Test 3 requires the striking out of 100 A's scattered through a block of 500 capital letters.

This test was first suggested by Professor Nosworthy of Columbia University, and has become a well-known standard method of testing concentration. The percentage of A's stricken out and the time consumed (in seconds) is noted. By repeating the test, the effect of habit, practice, and fatigue can be studied.¹

Defective concentration is one of the most potent causes of failure in school work.

L. Naming of Objects.—This test is intended to determine, approximately, the range of a child's experience and vocabulary. It is rather elementary in character, yet may be extended at will and may give some remarkable revelations to the examiner. The range of experience varies considerably with different children, irrespective of their mental capacity. Its limitations will throw light upon other failures which could not otherwise be understood. After all, no superstructure of knowledge can be built upon too flimsy a foundation, and these elements of knowledge, tested as here suggested, form the apperceptive basis for all further instruction. Earlier studies in experimental education have shown that the contents of children's minds before entering school must be definitely known before teaching can be a success, and it has been demonstrated that

¹ *The Training School*, Vineland, of May, 1913, contains a report on experiments with the A test on the feeble-minded. The conclusions are that it is not reliable for the testing of mental defectives, partly because of the lack of correspondence between the results obtained and intellectual ability. "There is no relation between this test and chronological age. . . . Sex differences are not very significant, though showing a slight superiority of girls over boys. . . . The A test is valuable as an individual psychological experiment, but is not in this respect superior to other tests yielding more reliable objective results." No mention is made as to what these other tests are.

we take only too often the knowledge of things for granted when the child has in reality no clear knowledge of them at all. It is also a distinct step from identifying an object itself to recognizing it clearly in a picture. Questions as to relative sizes of pictured objects may also lead to interesting discoveries.¹

M. Language.—It is the power of language which distinguishes man from the animals. A sufficient mastery of the elements of *spoken language* is therefore requisite to make rational human development possible. Substitutes for spoken language never reach the accuracy of the live word. Thought is bound up with language and is clarified by expression through language.² *Written language*, on the other hand, is the result mostly of school training, and there are persons unable to read or write who nevertheless possess a respectable amount of intelligence and social effectiveness. *Illiteracy* as such is not necessarily a defect; it may be an accident. Furthermore, there are some persons who may never, from constitutional defect, develop high qualities in the province of book-lore and written expression, and yet be perfectly able to contribute a considerable efficiency increment to society through other gifts—of an artistic, constructive, or other kind. We may bear in mind the fact that the human race had existed for many generations and had built up civilization after civilization before the arts of reading and writing became privileges of the masses.³ There are to this day civilization levels in modern society which represent these earlier stages. They will be found “backward” in the traditional “es-

¹ Cf. “The Career of the Child,” pp. 82 ff.

² Cf. “The Career of the Child,” chap. XII.

³ Cf. Chapter III.

entials" of the ordinary school, reading, writing, and even arithmetic, and yet are not mental defectives in the true sense of this term. They fill their place in life.

The results of the language tests here presented must be measured in the spirit of the foregoing considerations.

Story Told from Picture.—The first test requires the telling of the story which a picture suggests. Any picture representing simple action, illustrations of fairy-tales, and the like, may be used. The step from merely enumerating the objects seen in the picture, as in the foregoing test, to the description of its elements, and the further steps to the valuation of the situation the picture represents, and to the interpretation of the picture's message to the observer, are important.

This first test is an oral one, appealing to spoken language only.

Written Reproductions.—The second test is threefold. It refers to the reproduction of a story which is either told the child, or read by him, or which he remembers, in *writing*. This test differs from the auditory memory test in this that it demands more than a mere reiteration or enumeration of memory images which are counted singly. It refers to the ability of the child to *catch the spirit of a story* and to tell the story as such intelligently in words of his own. The writing of it amounts really to a composition, and the author has therefore included this test in his minimum requirements, omitting the writing of an original composition as mentioned under O, 4. The three forms in which this test is presented embody three different methods of performing it.

In cases of illiteracy an oral reproduction may be substituted for the written one. After all, this is a *language*

test, not a literacy test, excepting in the case of the second form, which requires the reading of the story.

Completion Test.—Test 3 presents a set of fifty-six incomplete sentences to be completed by the child. He is to write on each line of dots the word which makes the best meaning. The sentences are graded with a view to increasing the difficulty with each step. While this test will gauge the ability of the child to use correct language, it is also a judgment test of high value, as it requires considerable discernment to catch the meaning of the sentence from which important elements are omitted.

This test was suggested by M. R. Trabue, of Columbia University, working with Professor E. L. Thorndike. Their investigations as to the best graded set were not completed at the time of this writing.¹ The set used now is as follows:²

Name:

Date:

ON EACH LINE OF DOTS, WRITE THE WORD WHICH MAKES THE BEST MEANING.

1. We like good boys (and) girls.
2. The sky (is) blue.
3. I see (the) man and the boy.
4. We are going (to) school.
5. Men (are) older than boys.
6. The (dog) is barking at the cat.
7. The kind lady (gave) the poor man a dollar.
8. The stars and the (moon) will shine to-night.
9. Here is the man who (can) do it.
10. The bird (sings) a song every morning.
11. The (girl) plays (with) her dolls all day.
12. Good boys (are) kind (to) their sisters.
13. Boys must (not) be rude to (their) mothers.

¹ Just before the manuscript of this book went to press the author received the announcement of the publication of Mr. Trabue's investigation by the Teachers College.

² The correct insertions are enclosed in parentheses. In the sheet given to the child, dots represent the missing word.

14. When the (boy) grows older he (will) be a man.
15. The stars (shine) brightly at (night).
16. The boy will (burn) his hand if (he) plays with fire.
17. The wind (blows) the dust into our eyes.
18. The best (time) to sleep is at night.
19. The girl fell and (hurt) her head.
20. The little (boy) and his dog (are) running a race.
21. The rude child does not (have) many friends.
22. Time (is) often more valuable (than) money.
23. The poor baby (cries) as if it were (very) sick.
24. The (sun) rises (in) the morning and (sets) at night.
25. The child (fell) (into) the river (and) was drowned.
26. Boys who play (in) (the) mud get their hands (dirty).
27. It is good to hear (the) voice (of) (a) friend.
28. The poor little (boy) has (had) nothing to (eat); he is hungry.
29. Boys and (girls) soon become (men) and women.
30. The boy who (tries) hard (will) do well.
31. She (can) if she will.
32. One's (words) do (not) always express one's thoughts.
33. Very few people (know) how to spend time and (money) to the best advantage.
34. It is a (hard) task to be kind to every beggar (who) (asks) for money.
35. Brothers and sisters (should) always (try) to help (each) other and should (never) quarrel.
36. Worry (has) never improved a situation but has (often) made conditions (worse).
37. Men (are) more (fitted) to do heavy work (than) women.
38. (Fair) weather usually (has) a good effect (on) one's spirits.
39. If a person injures one by (accident), without having intended any (harm), one should (not) (feel) insulted.
40. A shelter (against) the weather is (much) appreciated on a (stormy) day.
41. It is very (difficult) to become (well) acquainted (with) persons who (are) timid.
42. The best advice (can) usually (be) obtained (from) one's parents.
43. A home is (not) merely a place (where) one (can) live comfortably.
44. The sun is so (bright) that one cannot (look) (into) (it) directly (without) causing great discomfort to the eyes.
45. To (begin) many things (without) ever finishing any of them (is) a (bad) habit.
46. (There) are times in the (lives) of almost (all) of us when we (hope) for a long life.
47. Children should (remember) that after all nobody is (apt) to care much more (for) their success than (their) (own) parents.
48. One's real (character) appears (more) often in one's (deeds) than in one's speech.
49. It is very annoying to (have) (a) toothache (which) often comes at the most (inconvenient) time imaginable.
50. When two persons (talk) about (things) which neither understands, they (are) almost (certain) to disagree.
51. (Few) things are (more) satisfying to an ordinary (man) than congenial friends.

52. When one feels drowsy and (tired), it (often) happens that he is (unable) to fix his attention very successfully (upon) anything.
53. The knowledge of (how) (to) use fire is (one) of (the) important things known by (man) but unknown by animals.
54. To (retain) friends is always (worth) the (effort) it takes.
55. (Injuries) that are (done) to one by an (angry) friend should be pardoned (more) readily than injuries done by one (who) is not angry.
56. One ought to (take) great care to (develop) the right (kind) of (habits), for one who (has) bad habits (finds) it (difficult) to get away from them.

Other words than those here suggested may be inserted without detriment to the meaning of the sentence, in some cases. Children will sometimes display rather original conceptions of a situation, and we must take them on their own terms.

The manner in which subjects respond to this test allows most interesting conclusions in regard to their mentality and the effect of their schooling. Their individual experience and personal equation count to some extent.

Ciphers; Puzzles; Secret Languages.—Lindsay, in the *American Journal of Psychology*, VIII, 4, has made a most interesting study of *puzzles* in child education; and Chrisman has contributed a valuable investigation of *secret languages* and the part they play in the language development of the child, in the *Child Study Monthly* of September, 1896. A further discussion of these important subjects will be found in chapters V and XII of the author's book, "The Career of the Child." His own practical work with children has convinced him of the enormous significance *puzzles* and *secret languages* have for the mental training and the evolution of the child mind, especially with regard to clear-cut conceptions of words and their meaning, of thought relations, and of precise cognition generally.

These considerations have induced him to insert the reading of ciphers into this schedule of tests. The ar-

rangement given here, under (4), offers three forms in an ascending scale of difficulty. Even the first, the *Rearrangement of Words* to make sense, requires an amount of mental effort and judgment which would distinguish the potentially normal child from the defective. The following cipher is used:

sent — mother — to — last — baker — my —
the — some — me — bread — to — night — buy.

(My mother sent me to the baker last night to buy some bread; or, Last night my mother sent me to the baker to buy some bread.)

The American version of the Binet series offers for the "mental age" of 12 the following three sentences:

1. For — an — the — at — hour — early — we
— country — started.
2. To — asked — exercise — my — I — teacher
— correct — my.
3. A — defends — dog — good — his — master
— bravely.

Huey transfers this test to the eleventh year and gives a slightly different arrangement of the words:

1. For — The — Started — An — We — Country
— Early — At — Hour.
2. To — Asked — Exercise — My — Teacher —
Correct — My — I.
3. A — Defends — Dog — Good — His — Bravely
— Master.

The reasons for these changes seem obvious. Other examiners have substituted other sentences which they believed were more within the range of their subjects' experience.

It is plain that this test is considered even by Binet one which requires at least pubescent maturity of reasoning power, even though Huey places it one step lower in the "mental age" scale. The author's own sentence contains almost twice as many words as those of the Binet scale and may seem therefore more difficult. It has not always been found so in practice, as it covers a simple situation. But he has accepted, from younger children, a partial solution of the cipher—if they get some sense out of it, even though they do not use all the words. Some of the forms so accepted are: "My mother sent me to buy bread last night." And: "Some baker sent my mother bread last night." If other examiners would prefer to introduce the Binet series as preparatory to the sentence here given, it would not change the nature of the test.

The *Cipher of the Second Order* is represented by the use of either numbers or letters. The simplest number cipher gives to each letter its corresponding number: 1 = *a*, 2 = *b*, 3 = *c*, etc. There may be an arbitrary arrangement, as, *f. i.*, numbering first the vowels *a, e, i, o, u*, and *y* as 1 to 6 respectively, and then the consonants in a similar manner: 7 = *b*, 8 = *c*, 9 = *d*, 10 = *f*, etc. In using letters for letters we may choose the next following letter to represent the preceding one, as *b* = *a*, *c* = *b*, etc., or devise some other arrangement. In our short examination we use this method only, asking the subject to decipher the following:

Nz gbuifs mpwft nf = My father loves me.

To subjects who have no experience in ciphers a simple explanation will have to precede the test.

For the *Third Order* the one suggested by Huey, and originally by Healy, is used, as described in "Backward and Feeble-Minded Children," page 198, and suggested by Huey for the "mentality of 15 years." It is as follows:

A	B	C
D	E	F
G	H	I

J.	K.	L
M.	N.	O
P.	Q.	R

S	
T	U
	V

	W	
X.	.	Y
	Z	

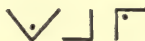
 = WAR

FIG. 17.

Cipher of the third order.

Tests 5 and 6 again combine language efficiency or, rather, a command of words, with the power of judgment.

Opposites.—Test 5 calls for the opposites of the following list of words: Bad, short, little, poor, well, thick, full, few, slow, soft, dark, sad, true, equal, sorry, new, cold, smooth, clean, deep, narrow, stale, heavy, high, bitter, living, open, kind, peaceful, lazy, quiet, above, within, near, master, friend, to love, to sleep, to sit, to work.

Classification.—First, a list of *qualities* is offered:

Name something that is high—cold—smooth—red—round—clean—bitter—heavy—soft—new—yellow—bent—wooden—glass—deep—empty—narrow—loose—sour—level—fresh.

Secondly, a list of *activities*:

Name something or somebody that walks—flies—barks—rolls—marches—teaches—swims—rides—sings—learns—rises—sinks—bumps—jumps—counts—floats—earns—spends—pays—sells—sails—buys.

Thirdly, the following two sets of *categories*:

(a) Name an animal, a plant, a food, an article of clothing, a piece of furniture;—a form of land, an occupation, a kind of building, an exercise, a game;—a virtue, a state of mind, a state of body, a purpose, an ideal.

(b) Of what is a part: a drawer, an arm, a sleeve, a seam, a leaf;—a room, a signature, a handle, a wall;—a soldier, a title, a teacher, a paragraph, a sailor, a word?

It will be observed that each of these series is arranged in an ascending order of difficulty. A signal or absolute failure to give opposites or classifications throws a child out of the group of potentially normal. But different degrees of maturity can easily be detected by the answers given. Of course the elements of personal experience and of school training play their part, but it will have to be decided by the examiner whether these are merely mechanical in nature or coupled with native ability of discernment. Even a child of the primary group will give at least one-fourth of the forty opposites, one-third of the twenty-one qualities, and as many of the activities. Perhaps the categories are beyond his stage, except the first group of five of set (a). But we need much more experience to "standardize" in any way. We can draw more important conclusions from the quality than from the number of answers given. What we are more interested in than even the present status of the subject is his chance of development, *i. e.*, his growth qualities. These can be deduced from the quality of his thought in giving these answers.

Where school training has been superficial, so that the child does not readily understand the terminology, *e. g.*, does not readily know what is meant by "opposites," preliminary explanations and illustrations must

be given. The fact should be stated in the record. With immigrant children, we shall have to valueate their possible foreign language handicap.

N. Reading.—Here are to be recorded: (1) The *grade* a subject has reached, most easily expressed in stating the number of the reader (in a graded series) which he can easily master; (2) his *reading facility*; (3) his *expression*; (4) his *enunciation* and *articulation* (eventually revealing speech defects); and (5) the *understanding* of the text read he exhibits. This understanding will manifest itself, in a measure, in the manner in which he handles the text in reading. A few leading questions as to what he has been reading about will assist in determining the degree of his intelligent mastery of the selection. This test may be connected with language test 2, and the same selection may be used for written (or oral) reproduction.

For a better valuation of this test it may be well to read chapter XIII, "Reading and Literature, with Remarks on Method," in the author's "Career of the Child." For both the reading and the writing tests, *cf.* Müller's investigations as referred to on pages 144 *ff.* of this book.

O. Writing.—Referring to what has been said before on the significance, or lack of significance, of literacy and illiteracy, the writing tests are here introduced for what they are worth. They are intended to determine what may be styled the writing equipment of the subject.

That a person's first accomplishment after learning to write is to *write his own name*, is recognized in the first of the writing tests here suggested.

The second test is *copying* from a reader. While it would seem natural to give the child a selection from a reader of the same grade that he can read in, he may in actuality show greater or inferior proficiency in copying than in reading, the two arts being physiologically and psychologically different. The fact should be noted.

The *spelling* test (dictation, 3) is in a measure a memory test. This memory may have a visual, or an aural, or a motor quality. Only as a motor test is it, strictly speaking, a test in writing. The preceding tests of visual and auditory memory will assist the examiner in determining the memory quality of the spelling test, unless he wishes to enlarge upon this test in a special way. It is, of course, of importance to know, in the interest of the future training of the child, whether he is "ear-minded," "eye-minded," or "motor-minded." But here it is of especial interest to study the child's method of spelling, whether it is phonetic (which would suggest the auditory element), or whether there are inversions while otherwise the right number of right letters is given (which would suggest "eye-mindedness" with inaccuracy of impression or inadequate visual memory), or omissions, or other peculiarities.

Test 4, *composition*, has been included under writing, although it is really a language test, for the reason that it is the intention here to test the child's ability to express himself in *writing*. It is well to recall what has been said in this regard under *M*, 2. The reader is also invited to read chapter XIV of the "Career of the Child," on "Oral and Written Composition."¹

¹ It may be of interest to compare with the requirements of these tests the "Tentative Minimum Requirements in English for Graduation

P. Number Concept.—The principles underlying these tests will be better appreciated after reading chapter VIII in "The Career of the Child," on the "Mathematical Evolution of the Child." It is shown there that the child's number concepts are of twofold

from an Elementary School," as suggested by a committee of the Boston Public Schools:

1. To copy twelve lines of simple prose or poetry, and a bill of at least seven items.

2. To take down from dictation a passage of simple prose.

3. To write from simple directions a friendly letter or an application for a position.

4. To write within a half-hour a simple, original composition of not less than one page of letter paper, with every sentence grammatically complete. The pupil may make revisions, including interlinear corrections, but must not rewrite.

5. To recognize the parts of speech in their common uses; to explain the construction of words and phrases in a simple sentence containing not more than one phrase modifier in the subject and one phrase modifier in the predicate; to have a practical understanding of the uses to which the dependent clause of a complex sentence can be put—whether it be to serve as noun, adjective, or adverb; to know the principal parts of regular verbs and of the common irregular verbs, and their tense forms through the indicative mood.

6. To read at sight with readiness and good expression simple prose as difficult as "Little Men" or "Hans Brinker."

7. To quote either orally or in writing fifty lines, not necessarily consecutive, of classic prose or poetry.

8. To stand before the class and talk clearly on some subject of personal, school, or public interest.

With the exception of requirements 5 and 8, the points here suggested are covered by our schedule of tests. However, wide limits must be allowed.

Actual tests made with these empirically set up standards, as reported by Ballou, revealed that some pupils made as many as forty or fifty mistakes in copying fifteen lines of simple prose, and that very few pupils made less than half a dozen mistakes. Again, very few of the six thousand children tested remembered much that they were able to write in an intelligent manner. Since it is so, says Doctor Ballou, it becomes necessary to decide certain important matters. Considering the fact that some of these pupils undoubtedly did know fifty lines of classic prose or poetry at one time, was it worth while teaching it to them if they have so soon forgotten it? Again, should they be expected to remember it for a longer time than most of them did? Also, if children are going to forget so soon much memory work, is it of sufficient importance to set up a standard for it?

This argument is very illuminating, indeed.

origin: being the result, on the one hand, of a *continuous series* (counting), and of *space conceptions* on the other. In chapter V, "A Rational Course of Study," mention is made of a distinct "counting period" in the mental development of the child, a period which precedes the conception of *number as an entity*, or of cardinal number in distinction from ordinal number. As long as a child merely counts he has not the concept of cardinality, and will confuse number proper with place in a certain series. In other words, a child is apt to attach the name "five" to the "fifth" object, not to the entire quantity of five units.

In the *counting test*, special attention must be given by the examiner to the facility with which a child passes from 19 to 20 and 21; from 29 to 30, and so on. Again, from 99 to 100 and 101; from 199 to 200; from 999 to 1,000, etc. It would, of course, extend the time of the test unduly were the child made to count all the way up. A commendable practice is this: Let the child count only part of the series, jumping from 34, for instance, to 95; from 111 to 156, with similar ellipses all along the line. This will not only ascertain a child's counting facility with sufficient accuracy, but also his power of quick adjustment.

Counting backward is really a continued subtraction of the same number and will be found much more difficult than counting upward. Even Binet, who claims to avoid tests presupposing school training, includes the counting backward from 20 in his 8-year test. He wants the child to count to 0, while the author agrees with Huey, who makes 1 the downward limit. Fluency in the downward range is a good sign of clear operation with numbers. Again, attention must be given to the

passing from higher to lower tens (91, 90, 89—81, 80, 79, etc.). Many children are apt to count like this: 92, 91, 80, 89, etc.

Counting by twos, tens, fives, and threes may seem to depend mainly upon facility in the multiplication table, and thus depend upon a mastery of these, which is largely a mechanical-memory process—the “making of certain noises in a certain sequence,” as a witty English critic of faulty school methods has expressed it. As a matter of fact, however, unless the tables have been taught that way in school, this test represents a task to the child which requires a clearer number concept, of the serial principle at least, than ordinary counting. It requires the conscious *omission* of regular elements of the ordinary series. Counting backward by twos, tens, fives, and threes is peculiarly apt to reveal a child’s facility in this respect. What has been said before about elliptical counting applies to counting by twos, tens, etc.

In *constructing numbers on the abacus* it is essential to induce the child to move 3, 5, or more beads *AT ONCE, without counting*. It is a test in number concept, in grasping a quantity as a whole. This test becomes even more interesting when a child is asked to construct a number which requires using beads from several rows, as 15, 23, 47, etc., when it will become quite evident to the observer whether the child grasps the situation offered by the abacus promptly, or not.

Numbers like 15 or 21 may also be constructed by requiring the child to use the same numbers of beads in 3 different rows, introducing multiplication and division. This test is intimately related to the primitive counting-board work, still employed by the Jap-

anese, Chinese, etc. Also, it tests the actual number concept of the child.

The *adding game with dice* adds the feature of conventional arrangement of units in groups. In this manner much higher numbers can be quickly recognized than when the units are arranged in rows, as on the abacus. Use one, two, three, and more dice.

Many ordinary children's games involve adding and subtracting of simple numbers. In the last test of this series an inexpensive top-spinning game is used, somewhat like a roulette, bought at the toy store. Wherever the top lands there is a number to be added or subtracted to the sum previously obtained. The game presents the numbers from 5 to 50, in differences of five. .

Space Conceptions.—Tests 2 and 3 introduce the other source of number conception—space. The first test is the most elementary one of all—the comparison of a small bundle of kindergarten sticks (three) with a larger bundle, containing four times as many (twelve). Such a comparison is the first step a young child takes in the realization of number differences. These differences are represented by differences in size. With very young children the tests will fail unless the sticks have the added attraction of color, or are made of candy. It indicates, of course, a low degree of number conception if this test fails with older children.

Test 3 is made with a number of sticks varying in length from one inch to twelve inches. The first question asked is: "Which is the shortest stick?" The second, "Which is the longest?" The child is then asked to build up the length of the longest by using shorter sticks, beginning with the shortest. It may be

found that some children will do this task well who cannot recognize number otherwise. Their good and fundamental idea of form and space may then be made the starting-point in instruction to develop the number concept. Comparison of different lengths and sizes leads up to quantitative concepts. The test may be varied in different ways.

Courtis Tests.—Test 4 introduces the “Courtis Tests.” These have been recently so widely employed in measuring the efficiency of class work in schools that it is unnecessary to describe them here. But their application in this series of tests rests upon their adaptability to the testing of individual children. How this can be done has been instructively illustrated by the Department of Educational Investigation and Measurement of the Boston public schools. In explaining the work of the department in this direction Miss Rose A. Carrigan writes in Bulletin II:

To make sure that his ability is of a reasonably permanent nature, the pupil should measure up to the grade standard on at least three successive occasions. Whereas a single test of a thousand or more children is adequate to demonstrate the efficiency of the teaching process in general, one test is not sufficient to determine the ability of the individual. To do this last effectively, several tests are necessary; otherwise there is danger of incorrect conclusions resulting from chance scores.

This very correct statement shows *the serious limitation of clinical study which is confined to one observation or test*. Nevertheless, taken in connection with the other tests, one examination of a child in the addition, subtraction, multiplication, and division examples given in Series B, Arithmetic, of the Courtis Standard Research Tests will allow of helpful conclusions. The re-

sults should be compared for valuation with the age and grade standards worked out by Mr. S. A. Courtis, Detroit, Mich., with such elasticity of application as will adjust them to individual types of mind.

Doctor Frank A. Ballou, director of the Boston department, has kindly given permission to use the following individual scores as illustrations of the value of this method for individual testing:

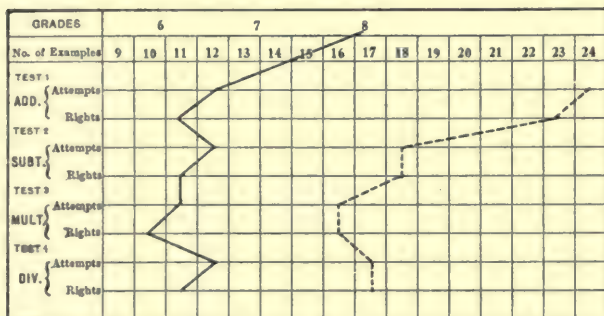


FIG. 18. CHART I.

Case 68.—Fig. 18 represents the curve of a 12-year-old boy in the eighth grade of a Boston school. The solid line represents the standard for his grade, the dotted line his score. It will be seen immediately how far he left the standard, or average, behind in amount of work done, and in accuracy. He did practically double the work of the average and exceeded the standard of accuracy three times, solving all examples he attempted in subtraction, multiplication, and division.

Case 69.—Fig. 19 shows the record of another 12-year-old boy, in a seventh grade at Edgerton, Wis. In the number of rights he is ahead of the standard at

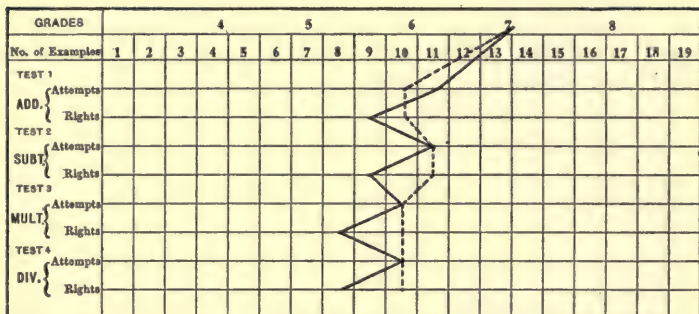


FIG. 19. CHART II.

all points, and his curve is more nearly a straight line than the average.

Case 70.—Fig. 20 is remarkable for two reasons. It represents the work of an eighth-grade Boston girl of

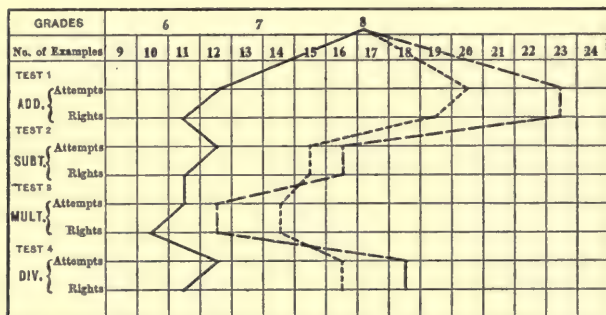


FIG. 20. CHART III.

13, who had not been thought to be in any way different from the average. Here the broken line represents her score in January, 1914; the dotted line the score three months later, in April. In both she is considerably ahead of the average standard in everything

except multiplication, where she is closer to the average. But in the three months, perhaps just because she thought that she was "good in arithmetic, anyway," she lost in amount and somewhat in accuracy, except again in multiplication, where her lower score had apparently prompted her to make some effort. This shows the value of practice, even in things which are otherwise well mastered.

Case 71.—This value of practice is clearly proven by Fig. 21, exhibiting the January and April scores of an 11-year-old Boston girl in the fifth grade. At the first trial the pupil was below standard in addition and sub-

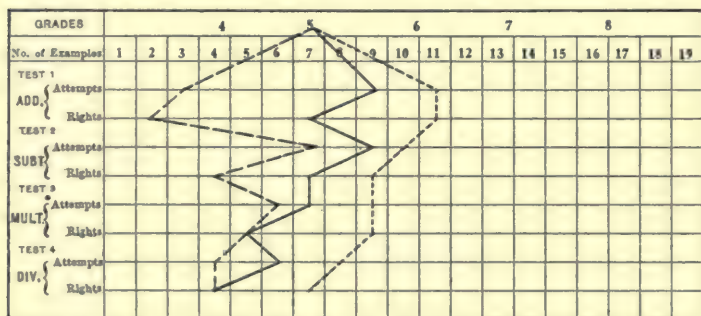


FIG. 21. CHART IV.

traction. After three months of practice she surpassed the standard in all four of the fundamental operations. The greatest improvement was in addition, which was the operation in which she had least ability at the time of the first test.

Case 72.—Chart V exhibits the eradication of a particular weakness (in multiplication) in a 10-year-old Boston girl pupil of the fifth grade, with a corresponding loss in her former best operation (subtraction). Her

score in April is more nearly like the standard, but more even than the average.

These examples give sufficient evidence of the need of individual valuation and of attention to individual

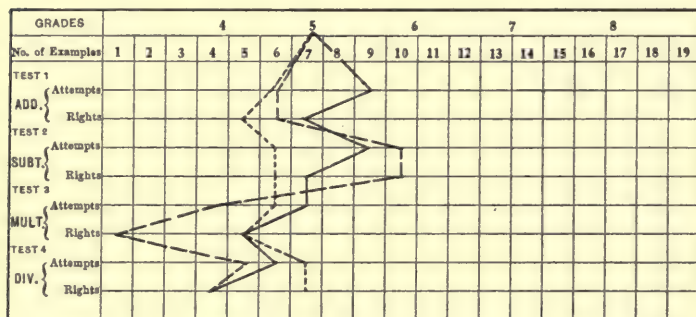


FIG. 22. CHART V.

needs. To show how very necessary individual standards are, how false ordinary school standards, and how much we are laboring under misconceptions in regard to the value of arithmetical drill as at present conducted in our schools, the author will permit himself to quote again from Doctor Ballou's paper:

The Courtis Tests have revealed great variations in the ability of pupils to add, subtract, multiply, and divide. They have shown that we have at the present time practically all grades of ability, from the fourth to the eighth in each class tested. Twenty-nine per cent of the pupils in the eighth grade could exchange places with a like number of pupils in the fourth grade without changing in the slightest the arithmetical ability in the fundamental operations of either class as a class.

The tests also show that from 35 to 50 per cent of the children tested in any one grade did not increase their ability at all in addition, subtraction, multiplication and division from the time the tests were given in January until they were given in April

—a period of about three months. This means that the children in these grades have apparently not profited in the least by the instruction given. For example, in the eighth grade in division, 32 per cent of the children tested showed no increase in ability to solve problems correctly. Also, in the fourth grade 50 per cent of the children tested showed no increased ability whatever in division, although that is the particular topic of instruction in arithmetic in the fourth grade.

What is the reason for these conditions? It seems probable that the drill work in the fundamentals carried on at the present time is not adapted to all pupils. In fact, it is probable that there is no one drill that is equally well adapted to any considerable number of pupils. Some pupils who do profit by a drill get more than they need under present conditions, while those who do not profit are merely marking time, or, as is shown by these tests, are actually declining in ability. This means that by class drills the variations in ability among pupils are being constantly increased rather than decreased.

Isn't it about time to recognize these variations in our methods of school instruction, and in our valuations of individual scores?

Problem in Judgment.—Test 5 is a particular problem in judgment. It may also be considered a problem in the power of visualization. It may be presented in various forms. One is given on page 296. Another form would be as follows:

You have seen boys march one behind the other, in single file, have you not? Now, there was a little line of boys marching down the street one day, playing soldiers. How many do you think they were? There were two marching in front of one, one was in the middle, and two were marching behind one. How many altogether?

As the catch, if it may be so considered, is in the condition of marching *in single file*, and as it is not intended to emphasize this source of error, the examiner may

repeat to the child several times that the boys were marching one by one. The proper answer is, of course, three boys. But the first hasty answer will usually be, five. Even the numbers seven and six have been offered.

If the child fails to visualize we may give him a second chance to use his judgment, by drawing dots on a piece of paper, or using the peg-board, or the abacus, to illustrate the line of boys. The examiner may, in extreme cases, even go so far as to say: If there were five boys, you would have four in front of one, etc. If even this suggestion, combined with the visual representation of the boys by the use of dots, pegs, or beads, fails to bring out the true situation, the child's conceptual ability proves itself to be of low order.

Further Puzzles.—Tests 6 and 7 are again in the nature of puzzles and usually arouse intense interest in potentially normal children. In the *Magic Square* the digits from 1 to 8 are represented by capitals, thus:

A	B	C
D		E
F	G	H

The problem is to arrange the figures so that $A + B + C = A + D + F = C + E + H = F + G + H = 15$. There are several solutions possible. One is this:

6	1	8
2		4
7	5	3

Test 7 has been suggested by J. H. Doyle, lately of the Culver Military Academy. It consists of four multiplication examples, in which certain numbers are rep-

resented by letters for which the proper figures must be substituted. They look as follows:

$\begin{array}{r} A \\ \times 3 \\ \hline 1 A \end{array}$	$\begin{array}{r} L M \\ \times 3 \\ \hline 18 L \end{array}$	$\begin{array}{r} K R \\ \times 6 \\ \hline 1 R 8 \end{array}$	$\begin{array}{r} T 4 \\ \times N \\ \hline 3 N 6 \end{array}$
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The solutions are: $A = 5$; $L = 6$; $M = 2$; $K = 2$; $R = 3$; $T = 4$; $N = 9$.

Q. Discrimination.—The tests in discrimination present some further features in testing the power of judgment and common sense.

Matching Pictures.—Test 1 is a primary test and demands of the child the sorting of picture postals representing city streets and scenes, or flowers and fruits, mounted on cardboard for easier and safer handling. There are twelve different pictures, and each one is in duplicate. The child is asked to find the duplicate of each. The test may be extended and varied by enlarging the number of pictures and increasing the difficulty of identification. Note the method of search. Some children will waste time by looking through the whole pile to find the mate of one card, instead of immediately arranging all cards for handy reference in duplication.

Comparing Lines.—Test 2 is the well-known Binet Test. In the Binet series it is placed in the group for the "mental age" of 12. It is fully described in every Binet syllabus.

Picture Arrangement.—Test 3 has been suggested by Professor D. Kennedy Fraser, of Cornell University. His full description, together with a series of fifteen sets

of pictures can be obtained by addressing him at the University, Ithaca, N. Y. The idea is to put before the child a set of detached pictures which in their proper order tell a story. They are presented in disarrangement, and it is the subject's task to study the intention of the story so as to find the proper sequence of the pictures. Doctor Fraser has selected sets from the well-known "Foxy Grandpa" books because these pictures have no writing on them and tell their own story, even after removing the explanatory text, which is printed underneath.

Doctor Fraser is making his experiments with these sets in order to standardize them in the usual way. He therefore presents the pictures in certain definite plans of disarrangement. From what is said in the chapter on the function of the educational clinic it will be evident that our purpose is different. While we may contribute to the experimental material for laboratory use, our main object is to test the power of discrimination in an individual child. Can he grasp the situation? Can he see the proper sequence? It will be well to arrange these sets, as Fraser does, according to their relative difficulty. But even here we may expose ourselves to erroneous conceptions and miscalculations. Fraser has been making his tests on adults. But an adult's point of view often differs materially from that of a child, especially if the adult is a college student. A child may grasp a Foxy Grandpa situation much more readily than an adult of intelligence and education, because it is nearer to a child's line of experience and thinking.

The author is, therefore, using any suitable series of from six to ten pictures, presented in chance order, sim-

ply introducing the task somewhat in the way Professor Fraser suggests, explaining to the subject the general idea of the test and the purpose of the story. Although the timing feature has its value, it need not be emphasized. Credit ought to be given for partial solutions of the problem.

Illusions.—Test 4 introduces two illusion tests. *The illusion is normal.* The meaning of these tests is described and explained in the author's book, "Some Fundamental Verities in Education," pp. 25 ff.

For Test (a) two pieces of wood are used, each weighing one pound. One is just an ordinary piece, 2 x 4 inches, about 1 foot long. Another 2 x 4 piece is cut, but only about 3 inches long. This short piece is sawed apart, hollowed out and filled with lead, so that the whole piece, when glued together again, would weigh exactly as much as the larger piece. The seams should be carefully obliterated and the pieces varnished, so as to enhance the illusion. The smaller piece will be thought to be heavier. It has been claimed that all children of 8 or more years get the illusion.¹

The *Optical Illusions* (b) are taken from James, "Psychology," II, 232 ff. A simple optical illusion is the comparison of a white circle on a black background, with a black one on a white background. Both are one inch in diameter. The white circle will appear larger than the black one.

R. Construction.—Under the general heading of "construction" the author has assembled a selection of tests which involve conception of form and relationship, of geometric design and rational construction of some kind.

¹ This is the Demoor Size-Weight Illusion.

Form Boards.—First, the form boards are introduced.

Under (a) we present the familiar *Seguin Form Board* (Goddard style), offering ten insets. It will be noticed that there is a distinct mental difference between those children who succeed, if they do at all, only after mechanically trying to fit the insets into any groove at all, without considering form, and striking the right one by chance; and those who rationally compare the form of the inset with the form of the groove. In this form board each form is different, and no inset can be fitted into any other groove but its own. The children who work rationally also work the quickest.

Investigations at Vineland seem to show that this test can be accomplished in about sixteen seconds by normal children who have reached the prepubescent stage (age 11-12).¹ A rational performance of this test would indicate sufficient intellectual power to warrant educational opportunities to be provided.

The five *Healy Form Boards* are as follows:

(1) Contains five oblongs of four different sizes, to be fitted into a larger quadrilateral space.

(2) Is a larger board, containing three oblongs, two circles, one semicircle and four pieces with concave or convex ends, to be fitted into five different grooves.

(3) Is the first of the picture form boards. It represents a farmyard, with a mare and her colt, and sheep and chickens. The heads and legs of the horses, one sheep and one chicken are cut out. They have to be fitted back into their grooves. An irregular piece is cut out of the grassy field, and there are three geometrical cut-outs: two rhomboids, one of them with two blunted corners, and a triangle which is to be reconstructed by

¹ *The Training School*, June, 1912.

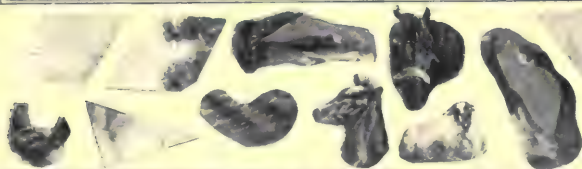


FIG. 23.—Healy form board No. 3.

fitting two equal right-angled triangles into it. No piece fits into any groove but its own. (Fig.23.)

This form board has been found very valuable by many observers in discriminating between mere retardation and real defect. Its significance is found in the combination it presents of pictorial and geometric elements. The fitting of the two triangles into the larger one seems to present the greatest difficulty to a child who is unused to handling geometric forms, even though he may otherwise have good sense of form. The author has found that it is in a measure an illusion to think that the pictorial element is very important for the child. Most of his subjects were guided more by the *form* of the inset than by its significance as part of a pictorial whole. This is particularly striking in the fitting of the inset representing a blunted rhomboid. One side of it completes the picture of some bushes; the other is part of the sky. But although the piece is so cut that it cannot be reversed without missing its best fit, children would again and again try to fit it without noticing the pictorial clew at all. The same is true of the other rhomboid, which forms part of the sky with a certain cloud formation serving as clew. Of course this very observation helps in judging of the child's method of performing the task.

(4) Is a schoolroom scene. Heads and arms of pupils and teacher form the insets, and the relative size of the pictorial elements in their perspective arrangement furnishes the clew.

(5) Is perhaps the best Doctor Healy has produced. He described it in the *Psychological Review*, May, 1914, as follows:

The brightly colored picture, 10 x 14 inches, represents an outdoor scene with ten discrete, simple activities going on.

When properly mounted ten 1-inch squares are cut out . . . each square bearing upon it an object necessary to complete the meaning of the separate activity. Besides these ten pieces there are forty other 1-inch squares, thirty of them bearing other objects, and ten being blank.



FIG. 24.
Healy puzzle No. 5.

PICTORIAL COMPLETION TEST. A test for apperceptive ability. The pieces which belong in the squares are mixed with forty other pieces, all the same size, representing a variety of objects. From these selection is made to fill the spaces. The picture is highly colored.

The task is to select the proper piece for each place.

From what Doctor Healy further states it would appear that this is a good test for children representing what the author has called the "elementary stage" of development or, rather, that part of it which marks the gradual passing from it to the next higher stage. There is no absolute "mental age" limit if the author inter-

prets Doctor Healy's data rightly. In his summary Doctor Healy says:

We evidently have in our completion picture a test for ability primarily adapted to the child type of mind. Every detail of the meaning has proved to be understandable, even by morons. The performance of naïve individuals of ordinarily good intelligence above 10 years of age should be better than in five minutes, and not more than one "illogical" and two total errors should be made. A worse record than this should arouse suspicion of defect in mental ability.

One great objection to the Healy Tests for use in such clinical work as can be carried on in schools without entailing much expense is their price. Realizing and recognizing their diagnostic value, therefore, the author has endeavored to suggest some simple tests which would at least partly cover the ground. The *reconstruction of dissected pictures* has long been considered helpful in determining a child's degree of judgment power, and it is easy for any one to arrange a series of such pictures in an ascending order, increasing the difficulty by increasing the number of pieces and by multiplying the problems through varying the form of the pieces and through complicating the picture ensemble. Jig-saw puzzles may be included, but their value does not increase with the complication of the task. They represent more a game of patience than of intelligence. The *cube puzzles* add another feature. Usually there are nine cubes in a box, representing six different pictures; it is the task of the child to find the right side of each cube to fit into a given picture. Geographical puzzles are included in this series. All these puzzles can be bought for little money in every toy shop.

These tests may be presented in two different ways: One is to place the model picture before the subject; this makes the task easier. The other is to have the child work independently with the pieces, and let him discover for himself what the subject and composition of the picture is. This latter form of the test involves a similar mental operation to that required for *Q*, 3, the picture-arrangement test.

Details for these tests have been given in the description of the author's larger series, in his book, "The Study of Individual Children."

Geometric Design and Form.—Omitting for the present a discussion of Test 3, Tests 4 and 5 may be introduced here, as they complete the inexpensive series suggested in a previous paragraph. Test 4, *Color Cubes*, is worked with a set of sixteen 1-inch cubes in a 25-cent box put up by the "Embossing Company," and purchasable in most toy stores. Each of the six sides of the cubes is colored in a certain way, so that pretty color designs may be constructed. These designs may be made from the model, or in free invention.

The *Anchor Puzzles* have been the delight of normal boys for many years. They are manufactured by the Doctor Richter's Publishing House, New York, and can be bought for a quarter each. (A smaller box can be had for ten cents.) Four different styles of these puzzles are being used in the author's clinic. They involve the construction of geometric figures (squares, oblongs, circles), by putting smaller geometric units (squares, triangles, oblongs, rhomboids, segments, sectors) together, and give occasion for much the same mental activity as the formal elements of the Healy Tests, and some of the tests introduced by Doctor

Knox at Ellis Island. But they offer really a far greater variety of fascinating tasks, inasmuch as the same pieces can be used for making a great number of various figures for which model books are enclosed. For a short clinical examination only one of these problems is given,

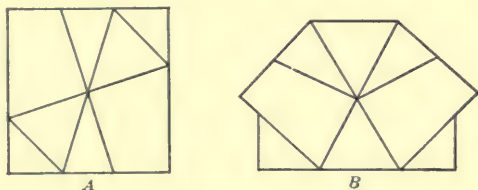


FIG. 25.

A. One of the Anchor puzzles.

B. One of the many forms which can be constructed with the same elements.

and the result is marked in the same manner as with the form boards.

Field of Search.—Test 3 presents the task of connecting 100 dots ($1\frac{1}{2}$ inch apart, arranged in 10 rows of 10 each) with a continuous line without touching the same dot twice or crossing over. There are only two rational ways of solving the problem, and only one is the speediest. Yet the problem can be executed in a number of zigzag ways which would be illustrative of the zigzag manner of thinking and experimenting on the part of the child. This task, which is a familiar psychologic laboratory test, is parallel to the well-known judgment test to find a hidden object in a field. The only rational method of doing this is identical with the most speedy method of connecting the dots. While young children of fair intelligence will easily hit upon the second rational method (passing from one row of dots to the next by a connecting line), the spiral solution is a

fair sign of mental maturing. It must be remembered that a child before reaching the prepubertal stage does not really think rationally. The budding of true reason occurs when a child enters upon the Intermediate Period. (Cf. "The Career of the Child," pp. 96 ff. and 146 ff.)

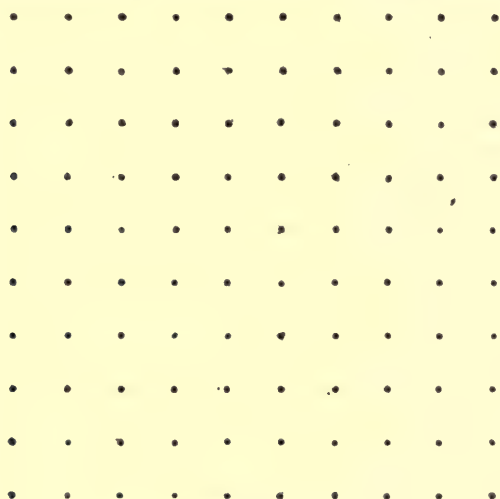


FIG. 26.

Field of search—one hundred dots.

Building and Construction.—In Test 6 the child is given an ordinary box, containing wooden building-blocks, such as one can buy in any toy store for 10 cents. The first task is to build some *steps*. It is, however, not necessary to make this a separate task. He may build the steps in connection with erecting a simple *bridge* as in the second task. Or, after constructing a house (Test 7), he may set it upon the inverted box containing the blocks, and build the steps as leading up

to the "porch" or "hill" represented by the box. *The order in which the tests are given can be adjusted to any condition or emergency.* In this, as in most of the tests, the task can be introduced in the form of a game. Have tiny dolls, or pasteboard figures, to play with, as living in the house, going up the steps, etc.

It will be found that some children, and not always those who are otherwise unintelligent, are singularly incapable of understanding the simplest principles of construction. This may, of course, be the result of lack of training, of opportunity, or of observation, as well as that of lack of power in this field. These children have the general form of steps in mind, perhaps, but do not know how to use their material, and will merely pile one block on top of another, the upper ones a little back of the front edge of the lower, without any prop to hold the upper ones in place. They will continue to try without hitting upon the proper construction, greatly distressed when they find that their steps will tumble down. Other children will find the proper way immediately. This difference is found even in children who have had kindergarten training, with its building gifts. The difference illustrates the fact that the mental activity of building from dictation and imitation is essentially different from building in free constructive effort.

A second task, given even to those who fail in the first, is the building of a simple *bridge* over an imaginary brook, for which any symbol may be used: a ruler, or a strip of paper, or a painted representation of a brook. Some children will put the block which is to be the bridge right on the "water," and have to be reminded of the fact. They may think of bridge pillars rising

from the water, not knowing of the substructure under the water. Some will start to build an elaborate structure up high, not thinking of the approaches or of the disproportion of the bridge to the brook, or to the little man who is to cross over it. There will be many individual variations in attacking the problem, for which few of them have any previous training. The observation of these variations will give the examiner valuable clues for appreciating a child's degree of common sense and individual experience, and for determining his mental type.

Eventually the building of a *house* may be added to the task. It will be easy to distinguish between those who have merely an idea of form without a concept of construction, and those who have both, or neither.

The *construction of houses* (Test 7) is somewhat different from the use of building-blocks of the ordinary kind. It involves the putting together of simple building material in an ascending order of difficulty. The very simplest form is that of pasteboard houses, which can be bought in boxes of "villages" or "toy towns" in the toy stores for a few cents. They are folded up, with the roofs and other parts removed, and can be put up easily. The more difficult constructions are made by dovetailing wooden parts, or by way of pegs, and the like. All these are available in any toy store. The familiar Meccano Game and its variations may furnish material for this test, which is intended to determine the ability of the child, understanding the principles of construction in each case, to "put parts together." The Anchor Stone Building-Blocks offer further material of this kind.

The last test of this group, *Mechanical Construction*,



FIG. 27.—Educational clinic. Building of houses, steps, bridge, etc.

consists in having the child "make" something. From a model he may put together a wooden box for which the material (sides, top, and bottom) and the tools (hammer, tacks, etc.) are handy. Or he may construct, from scraps of material (pieces of tin, blocks of wood, cigar box, spools, package handles, cardboard, wire, twine, etc.) some object or model such as his fancy may dictate. This last test is one of those which may be done outside of the clinic proper, in the school itself, or even at home. Specimens of the child's previous independent work may be accepted in lieu of new work.

S. Expression.—The expression tests as here outlined refer mainly to the child's *emotional quality*, to his *æsthetic attitude* and his *art instinct*. This instinct, by the way, is much more pronounced in the majority of children than is usually assumed. Of course, we must take a child's method of expression on its own merit, not imposing adult standards or symbols. Many who first assert, *e. g.*, that they cannot draw at all, will surprise the examiner by the artistic quality of their work.

In this field the author's own investigations have fully established the fact that a child passes through developmental periods ("culture epochs") which broadly correspond to the periods of civilization through which the race has passed.¹ *The parallelism between the art work of children and that of savages and ancients*, as demonstrated in these experiments, is certainly very striking. It can be observed that the same biological laws which have determined the evolution of the human mind in the race are still at work in the maturing of

¹ Cf. pp. 40 ff.

the child soul from infancy to adult age, and shape the children's artistic expression.

This point, as well as the principles underlying these expression tests in general, are thoroughly and minutely discussed in the author's book, "Some Fundamental Verities in Education."

The first of these tests is largely mechanical, the *drawing of forms through ground glass* (geometrical, conventionalized, and life forms), using the well-known toy. It is primarily a test in motor co-ordination and general conception of form.

Tests 2, the *drawing of a man, a horse, and a house*; 3, *drawing of pond with trees on opposite sides*; and 4, *illustration of story*, are fully understood in their meaning and scoring by a study of the book referred to.¹

¹ To show the author's position at least in regard to the third task, the drawing of a pond with trees, the following quotation from his book, "Some Fundamental Verities in Education," pp. 95 ff., will be instructive. It will serve as an example of his procedure in the experiments alluded to:

In Egyptian work all objects are so drawn as to expose their characteristic side to view. The ground, roads, meadows, ponds, are drawn as they would appear from above; a man standing on the opposite side of an oval pond looks as if he were placed on a blue bag. Let us look at Fig. 28, a pond with palms. The artist paints the pond rectangular in shape, lined in with yellow sandstone, just as if he were drawing a diagram or a plan, or working drawing of it. On the side of the pond toward the observer there stand three palm-trees; on the opposite side only two. Consequently three of them are drawn in front of the diagram, the other two behind it, as it were.

In the experiment the pupils of all classes were requested to draw a pond with trees in front and on the opposite side; the rectangular form was mentioned only to the primary and grammar classes. No child drew the picture exactly in the Egyptian style. Five groups could be distinguished. The most immature method showed a *radial* arrangement of the trees (Fig. 29). This method was characteristic of 43 per cent of the kindergarten pupils; some pupils were found in every class up to 12 years of age who had not advanced beyond this primitive, or rudimentary, form of representation. The same method is recognized in the Egyptian picture of the brickmaker's pond, in Fig. 30. It is parallel to the one employed in Fig. 31, representing a shaman's lodge (Alaska); the figures, arranged radially along the four sides, are meant to designate people seated around the walls of the lodge. In the second and third groups the pond was drawn strictly rectangular, as in the Egyptian drawing. About 50 per cent of all drawings were of this class. Group II had the

Valuable studies of children's drawings have been made by a number of observers like Earl Barnes, Elmer E. Brown, and others. Their various reports should be

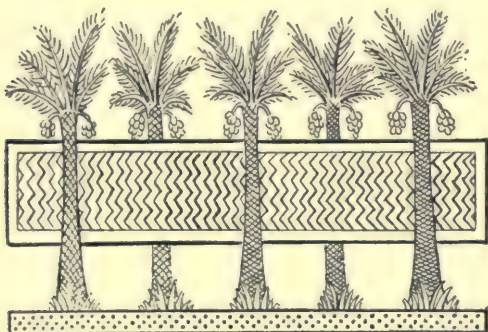


FIG. 28.

Ancient Egyptian painting: pond with trees.



FIG. 29.

Child's drawing of pond with trees: radial arrangement of trees.

trees arranged in various symbolical ways, of which Fig. 32 is a fair example. With this may be compared Fig. 33, a symbol taken from an Ojibwa chant, meaning "It is growing, the tree." The symbol represents "Mide wigan (the medicine-lodge) with trees growing around it at the four corners."

Group III is represented by Fig. 34, where the trees are drawn in natural position. Another group shows the rectangle of the pond drawn more or less in perspective; and the fifth, represented only by the maturest children of the highest classes, drew a perfect landscape.

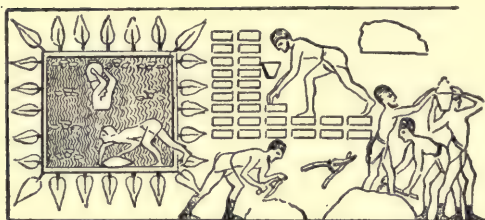


FIG. 30.—Ancient Egyptian painting: brickmakers.

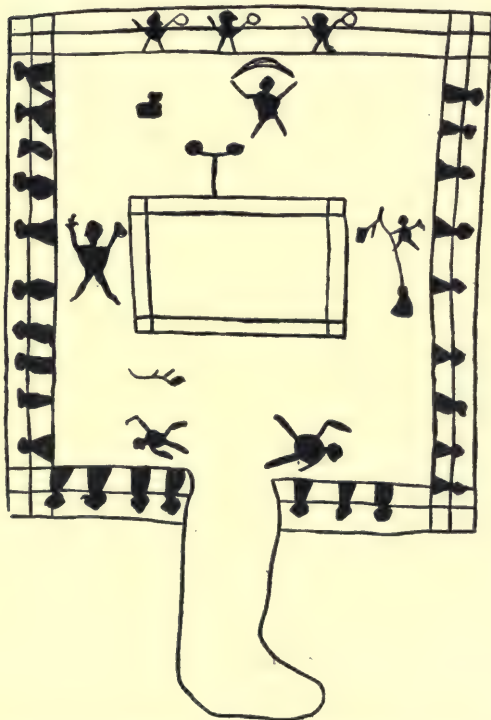


FIG. 31.

Indian drawing of a shaman's lodge (Alaska), from Ann.
Rep. of U. S. Bureau of Ethnology, 1888-89, p. 507.

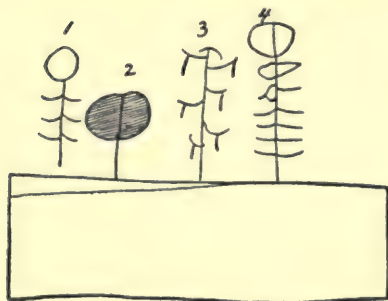


FIG. 32.

Child's drawing of pond with trees, in sym-
bological arrangement.

Trees 1 and 3 are meant to stand on the
opposite side; 2 and 4 on the near side.

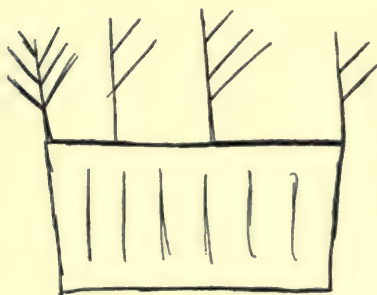


FIG. 33.

Indian drawing of Medicine Lodge. From
Ann. Rep. of U. S. Bureau of Ethnology,
1888-89, p. 245.

carefully studied, as they will throw much light upon the significance of the drawings which will be produced in these tests. These tests are of great importance, as we may reach the soul of the child, his grasp of things and situations, more safely through his artistic expres-

sion than through many another test. We may also liberate powerful forces for development which otherwise would have remained dormant and been doomed to neglect, suppression, and consequent disorganization and vitiation, so that the entire career of the child and his emotional life would be poisoned.

The *painting and modelling* tests (5-7) need no further explanation.

The author has added the *singing* of a song and the *recitation* of a poem or prose selection to these tests. There are two reasons for this: One is that the choice made by the child, or his hesitancy, or lack of response, or on the other hand his readiness or even boldness, allow interesting deductions to be made as to his type and emotional quality. Again, the trueness of his voice, his sense of melody and rhythm, his manner of reciting and singing, give valuable information as to the educational significance of these arts for him.

MINIMUM REQUIREMENTS

In their completeness even these tests, shorter though they are than those described in the author's book, "The Study of Individual Children," require so much time that several sessions with the subject are necessary to accomplish results without fatiguing him, especially when this subject is a child of slow response and ready fatigue.

A limited number of these tests has therefore been selected, combining determinative elements of physiologic and psychologic function with facts of individual ability and training, which may serve as a short laboratory test sufficient for making a tentative diagnosis. Even this will require from one to two hours for each



FIG. 34.—Rectangular pond with trees on opposite sides. Child's drawing. Trees in perspective.

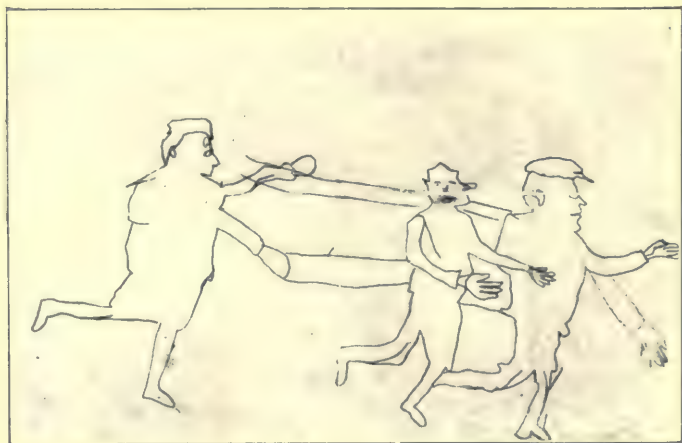


FIG. 35.—Free-hand drawing by K. B.

child. To expedite matters, those in the list of selected tests given below as are marked with an asterisk may be given in group work with subjects who can write well so that the answers may be written.

It must be understood that, after the suggestions which the tentative diagnosis will carry with it for the child's training have been put in practice for a while, a second examination will clinch the most important facts and throw light upon the child's power to gain and profit from properly adjusted training. In every instance care must be taken to prepare as full a child history as can be obtained, and to have sufficient medical data.

For this shorter examination the following tests have been chosen (designated by the use of *italics* on the test cards):

- A. All the visual tests (* memory tests in groups).
- B. All the auditory tests, excepting location and pitch, and the memory for single tone (* word-pictures in groups).
- C. The tactile tests, except needle-points.
- *I. Train of ideas, complete.
- J. Imitation, complete.
- K. Of the concentration tests, only the first: Following directions, is included. This can be simplified by combining it with other tests, for instance R and S, making some of the performances part of the directions.
- L. Naming of objects, complete.
- M. Of the language tests, the first (telling story from pictures); * the writing of a story read by the child; * the completion test; * the first order of ciphers; * the opposites, and the * classifications.

N. Reading, complete.

*O. Writing, only own name and dictation, omitting the rest. Even the spelling test may be omitted as a separate test, taking the spelling in the language tests as a basis of judgment.

P. Of the number-concept tests, only (1) counting, and the abacus test; (2) comparing heaps of sticks; (3) comparing different lengths. and (5) * problem in judgment.

Q. Discrimination: (1) matching pictures, and (3) picture arrangement. By using a number of different sets of pictures, a group may take this test together. Of the illusions, only the weights, perhaps the circles.

R. Construction: the Seguin Form Board, and Healy's No. 1. Reconstruction of pictures. * 100 dots. The building-blocks and the construction of houses.

S. Expression: * the drawings mentioned under (2), (3), and (4). Also the singing and the recitation.

SUMMARY

The summary blank as here given is *for the use of the examiner only*. He will record his immediate findings as well as he can.

He should be cautioned at the outset, however, that no ready-made schedule will give him the opportunity of proper diagnosis. He should consider the statements in his summary merely as additional notes, and should refrain from an immediate judgment. A real diagnosis requires thought, patience, and time. A child's condition cannot be diagnosed as a physician may diagnose some specific disease. It will be well for the examiner to look over his data carefully, to consider his observations and impressions, and then to write out in an

unscheduled form what he thinks of the case.¹ In the appendix a few summaries of this kind are reproduced to show what is in the author's mind.

The first entry in the summary is a statement as to the nature of the child's *response*; whether it be prompt, slow, halting, eager, indifferent, timid, or sullen. The right word should be underlined. Space is left for inserting any other word which would express the examiner's judgment better.

The second item refers to *fatigue*. A child's slowness of response may be due to chronic fatigue, or to temporary fatigue at the time he is reported to the clinic. If his power of endurance is small and the examination becomes tiresome to him, distinct allowance must be made for fatigue symptoms, and eventually another appointment should be made to secure the best possible conditions for examination. Fatigue is a danger-signal and may point to bodily impairment.

Mention has been made before that the *effect of school training* and the *extent of individual experience*, on the basis of the child history and the findings through this examination, should be recorded here.

The purpose of the next entry is to grade the child tentatively according to his *period of development*. As explained in previous chapters, the author is disinclined to determine "mental age" in terms of years. The child, however, passes through consecutive periods of development, each representing a more or less distinct stage in mental evolution, with predominant instincts,

¹ Any one interested in making exact computations of a pupil's standing in his group, after the psychologic laboratory method, will find a brief and illuminating statement in Doctor Pyle's book, "The Examination of School Children," and more comprehensive directions in Doctor Whipple's "Manual of Mental and Physical Measurements."

tendencies, budding faculties, mental attitudes, etc. Sufficient explanation of this division has been given in several places so that further details are unnecessary.

The examiner will, indeed, find this great difficulty in stating a child's period of development: no individual passes through these stages with equal rapidity in all manifestations of mental growth. He may be distinctly backward, representing a more ancient period of civilization, in some; while he is perfectly modern, or even in advance of his fellows and his time, in others. No one man comprises in his personality modern equipment or the modern intellectual level in everything.¹ In reality, the curve of our various endowment levels is a very irregular one, as the diagram figure No. 36 is intended, somewhat crudely, to illustrate. It is this irregularity of mental levels which makes people differ from one another. Reference is here made also to Chapter III, in which the author has endeavored to show that in addition to individual differences, distinct civilization levels can be defined in modern society.

We may therefore be obliged to record that a child is in the primary stage in graphic expression, in the elementary stage in general intelligence, while he may represent an advanced stage and special talent in constructive or mathematical work. Or, the order may be just the reverse. Many varieties are found. By studying the child in this manner it will be possible to determine approximately his *type*, or the mixture of types he exhibits, with possible leanings in certain directions. The various types here enumerated may not cover the entire range of such tendencies and endowments, but are set down suggestively. Children will show mix-

¹ Cf. p. 42.

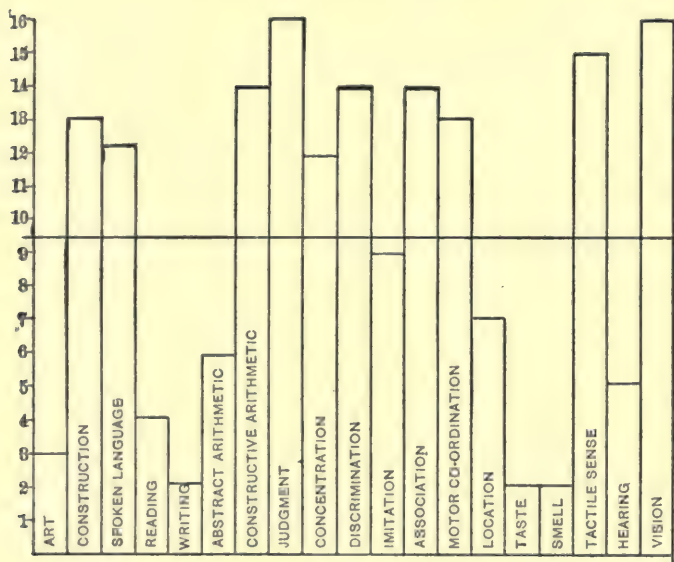


FIG. 36

ARBITRARY DIAGRAM OF ENDOWMENTS

The line, at 9.42, indicates the average attainment, 50 per cent of the perfect score. Suppose the endowments of another individual were reversed in capacity. The average would be the same, but the *type* would be opposite to the one here charted. The individual type here represented would belong to the constructive and scientific type, possibly being inventive and progressive, with a commercial bent, though imperfect in literacy, art, and the minor sense-perceptions. This type is predestined to success in achievements and business. While this chart is arbitrary, and anything like exact numerical values can perhaps never be ascertained for any of these endowments, it will give a fair idea of what is in the author's mind and what certainly comes near enough to the truth to be illustrative.

tures of types even when they have special endowments. The "mediocre" child is here mentioned, preferring this term to the term "average," as one who does not show any special inclination but conforms to moderate, usual requirements.

One very important point which has been but slightly

touched before in these pages must be stated here with great distinctness. The old idea that there is such a thing as "formal training" has been given up. That is to say, a boy studying Latin successfully is not on that account better fitted to grapple with mathematics, or history, or nature. No one study gives anything like a universal mental discipline, which stands in good stead for the mastering of other subjects. There is at least no automatic interrelation of mental activities such as has been supposed to exist. By systematic correlation and co-ordination these activities can and must be organized; but that is something essentially different from the old notion of "formal training." Likewise, *no excellence in any particular test in any schedule of tests is evidence of general mental ability. It may be accompanied by a most signal defectiveness along other lines.* Even successfully passed tests of different kinds do not allow of generalized conclusions; it is one of the weaknesses of the Binet type of tests that it presupposes such a possibility. Each individual child represents a type by himself, combinations of units which in their totality differ from every other combination. The "mediocre" type presents perhaps the kind of individuals most frequently found in a community, showing minimal variations from the mathematical average, and conforming to stereotyped conditions. But even children of this type vary considerably in the combinations of their mental units. Examiners must therefore be warned not to attempt to derive general conclusions from detached tests or observations.

Number 7 refers to what we may call the *present educational status* of the child. This entry may be made in the form of a brief diagnosis, referring also to the dif-

ferentiation of the child as suggested in the author's "Tentative Classification of Exceptional Children" (Chapter IV). In other words, it may be stated whether the child belongs to the group of potentially normal children, or to the subnormal or abnormal groups. Again, the subdivisions may be considered, and the child put down as an atypical, or pseudoatypical, or as a physically defective, or a submerged individual, as showing symptoms of arrested development, or belonging to the primitive group. The classification presents a number of special designations which will help in the final analysis and diagnosis.

It is hardly necessary to explain the last entry in the summary. It is evident that a mere summary, diagnosis, or attempt at one, can be of little value unless some practical suggestions are made as to what the child needs. If he is found to belong to the abnormal group, custodial care will have to be advised. If, however, he shows sufficient mental quality and stamina to deserve an education, the kind of training he would need so that he may be developed to the level of usefulness and independent existence in his own right must be indicated. This includes suggestions, eventually, for vocational training.

As has been shown on page 243, there will be a number of cases the suggestions for which cannot be adequately carried out, owing to the absence of proper educational and other facilities for the care of many types of exceptional development in children. *Then, the clinical findings will be a strong argument in favor of a rigorous propaganda for establishing ample provisions.*

PART III

THE PROBLEMS OF PREVENTION, ADJUSTMENT, AND ORGANIZATION

CHAPTER XVII

THE PROBLEM STATED—ITS PERSPECTIVE

Various Aspects.—In the first two parts of this book the different types of children which constitute *variations* of the normal, as well as those which represent *deviations* from the normal, have been fully discussed; and an attempt has been made to describe clinical methods by which we may arrive at a safe diagnosis of individual cases. In a measure the problem is not altogether a problem of the “exceptional” child, if we mean by that term *deviations*; it is a problem of the “different” child; that is to say, the child who differs from traditional standards, as well as that of the deviating child. *The general term “exceptional” as used by the author must be understood as including both groups.*

Many of these variations are by no means undesirable, and even some of the deviations are not necessarily detrimental and degenerative. It is all a matter of individual diagnosis and handling. In fact, most of the “exceptional” children are “worth while,” often more so than the conforming child.

In this part we are to discuss the problem of how to meet the conditions causing eventual failure in life,

whether the individual so endangered be really normal, or potentially normal, or exceptionally bright, or dull, or psychopathic, physically defective, subnormal, or abnormal.

This discussion will imply considerations for adjustments in home and school for the legitimate needs of children who do not follow the beaten path, or who need removal of their handicaps to allow them to live their own life successfully and effectively, in its social, emotional, mental, and ethical aspects. We shall have to refer to those powerful influences which determine a child's chances even before he is born—to the hereditary and congenital factors. We must consider home life and home education; social and environmental conditions in general—the *milieu*, the community standards and community demands which affect the ideals and life aims of the home and of the individual child. We shall enter into the question of reorganizing our school curricula so that they may reach out with fairness and appreciation to different mental types. School methods will require scrutiny in order to ascertain what course it is best to follow to meet the budding faculties at the "psychological moment." Problems of the organization of clinical research and of medical inspection and co-operation will appeal to our attention. We shall have to discuss the factors which determine American civilization and democracy so that the individual may find his place in the world.

In all these discussions the following four aspects will have to be borne in mind:

First.—Is the condition with which we are dealing a manifestation of normal instincts, normal mental development, normal biological factors, or not?

Second.—If it is a normal condition, what must be done to set the individual forces at liberty in order to secure for each child the opportunity for developing his highest possible degree of personal and social efficiency? What measures must be taken to prevent derailment, perversion, or paralysis of the normal potentials?

Third.—If the condition be subnormal or even abnormal, what disposition must be made of the individual? What measures of relief can be adopted? Can a place in human society be found for the individual where he can live up to the highest measure of his efficiency? Or must he be permanently segregated?

Fourth.—What are the prospects of forestalling subnormal or abnormal development? Can we prevent subnormal and abnormal births? Can we influence heredity? Under what conditions? To what extent can we control congenital situations and occurrences? How can we secure corrective influences in the early life of each child, as to health and disease, mental and moral states, emotional stimuli, and general environmental circumstances? How can we prevent an individual's subnormality (or even abnormality) from going beyond uncontrollable necessity, saving him from needless degeneracy and suffering?

Various Provisions.—In order to meet these demands we may find ourselves constrained to establish energetic and thoroughgoing activity along the following lines:

First.—We must establish *new standards* in the home, school, and social life, so as to recognize present-day conditions, scientific principles, and the fact of variation of type.

Second.—We must study and improve *the legal status of the child*, as to his educational opportunities and his occupational differentiation.

Third.—We must establish *principles of eugenics* on a rational basis, free from sensational and hysterical elements, which will tend toward a cleansing of the human race of unsound and degenerative influences.

Fourth.—The problem of a sane and sweet *home life* and of a wholesome *home education* must be studied and understood in all its bearings upon the natural development of the individual child.

Fifth.—The *ethical and religious* element in education must be fully recognized and given its place as a most powerful agency in bringing about normal life conditions.

Sixth.—The economic, political, social, and ethical atmosphere of the *environment* must be appreciated as a determining factor in shaping an individual child's ideals and destiny.

Seventh.—There must be opportunities for a careful *scientific valuation of each individual child*. Clinical tests must be established for all children, those at home and those attending school, to be applied at regular intervals for the purpose of following them through the different, successive periods of development to catch the budding time of their faculties, to adjust training to their changing needs, and to recognize their individual genius and type.

Eighth.—This clinical work must be organically coordinated with a thorough system of *medical examinations* through the family physician, the medical inspector of schools, and other similar agencies, so that the bodily health of the child and his physiological peculiarities may be thoroughly safeguarded. This health aspect of the problem should be organized in connection with health boards, sociological investigations, friendly visiting, parent-teachers associations, provisions for psychological and psychopathic research and examination.

These clinical researches, educational, psychological, medical, and sociological, will establish, with some degree of accuracy, *the educational problem of the individual child.*

Ninth.—Parents, teachers, and educational workers generally must be so trained that they appreciate these individual problems and deal with them intelligently. They must learn to recognize ordinary and typical differences as well as danger-signals in cases of impending disease or derailment—physical, mental, or moral.

Tenth.—We must put our *courses of instruction*, our methods of presentation and training, our grading and grouping, our promotions and graduations upon a strictly scientific basis, *meeting the individual variation at every point* so as to achieve the highest efficiency of each.

The present school organization must be so reconstructed that typical differences be met by special provisions. There should be differentiated courses for the manual and constructive, the artistic, the non-literary as well as the literary type, etc. There should be what has been called vocational guidance at such junctures in the life of each individual when such guidance is needed—a guidance which will be based upon a scientific diagnosis of the individual's type and level of efficiency. This must not be understood to mean that the individual training should be one-sidedly "practical," or rather what may be called readily "coinable" in the currency of business success; but it means that the special bent be used as a point of vantage, as the angle of vision from which a fundamental, broad education may be approached, making due allowance for excellences and weaknesses, without robbing the child of the needed

opportunity to round out his culture. Yet we must bear in mind that the fetich of "formal culture" has lost its halo, and that most of the "all-'round" culture needs revision on psychologic principles.

In the last chapter of the author's book, "The Career of the Child," the suggestion of using the special bent as a point of vantage is more fully elaborated in the matter of high school differentiation.

Eleventh.—The life of the school child should not be confined to four walls. The less of school palaces we have, accommodating hundreds and even thousands, and the more of smaller, convenient buildings we substitute for them, the better. There must be *ample space* for the children—outdoor space as well as floor space. There should be much *open-air* work, open-air gymnasia, etc., not only for children afflicted with pulmonary disease, anæmia, or similar ailments, but for all children. There should be *laboratories, art studios, workshops, moving pictures*, and a host of other things which will *enrich* and *enliven* the school-days of our children.

Twelfth.—The day schools should be supplemented by *special institutional schools*. A small number of these will serve to house the permanently disabled, those who ought to be under *custodial care*, like the feeble-minded, demented, and epileptics. In most instances these institutions should be in the nature of colonies. A much larger number of institutions will be required for other special purposes. There should be *sanatorium schools* for the atypical, the neurasthenic, the psychopathic child. *Home schools* should be provided for those who need a revision of their environmental and educational influences, as in the case of children with disintegrated moral instincts, or of those who are neglected and des-

titute, or whose mental life has become cramped and stunted under the restrictions of congested life conditions.¹ There should be *forest schools*, *farm schools*, *mountain camps*, *camps by the seaside*, etc., to meet various conditions. And all these should be *under the direction of the school authorities*, not in the sense of punitive institutions like the regulation reform school, nor in the nature of a charity—they should *not* be under the direction of state or municipal boards of charity and correction or left to the chance efforts of private charity. Correctional and punitive measures are indicated only in the gravest cases of misdemeanor, and even then the educational aspect should be primary, the educational authorities should be co-operative, and clinical methods of diagnosis should be employed. With every

¹ Nina L. Crawford, supervising principal of the Newton School, makes a plea for the parental school in the issue of *The Teacher* (Philadelphia), of May, 1915. She says: "We read of what Thomas Mott Osborne is doing at Sing Sing, sociologically, and of Henry Ford's great and glorious work in reclaiming convicts by employment, and we are reminded more than ever of the great need of parental schools, in order to reclaim the so-called 'bad boy.' In our great public schools, to be sure, we find special disciplinary classes for the poor incorrigible boys—those who have proved themselves unfit to stay with the other or normal pupils. Many of these sad derelicts are very happy and good while in the special school. . . . If, therefore, they can be so easily and happily guided into proper habits of work and play, why not continue this glorious work after school hours? Instead of this, these boys are dismissed after five hours in school, and what becomes of them during the remainder of the twenty-four hours? Oh, the sadness of it—the wicked language and habits learned on the streets, in the dirty, poverty-stricken homes of many. Some of our boys have often been out all night; then, afraid to go home, have come to the school as a refuge, dirty and without breakfast. Many of the boys prove that they prefer the school to the home. Their willingness to assist the teachers, their teachableness, and frequent docility make us often long to keep these boys for all of the twenty-four hours so that the good habits may become permanent. The good done in school is frequently undone at home. . . ."

juvenile court, with every charity organization, or charity board, there should be connected clinical agencies for the determination of the mental and physical status of the offending, or neglected and dependent child.

All this means an entirely new attitude toward the practical problems of education, charity, and correction.

CHAPTER XVIII

LEGAL PROVISIONS FOR EXCEPTIONAL CHILDREN

Before entering upon a discussion of the various factors for relief and adjustment suggested in the previous chapter, it may be well to review briefly existing legislation and the general policy of legislative measures pointing toward such relief and adjustment as far as school legislation is concerned.

Compulsory-Education Laws.—One of the fundamental things in planning relief of the situation is the recognition of the principle that education is a public function, or at least a public responsibility. This implies compulsory education—the placing of each child under such educational influences as will secure for him (or her) the fullest possible opportunity for obtaining an education commensurate to his or her needs and capabilities.

There are still six Southern States in which, owing to a misconception of the principle of personal liberty, school education is merely optional with the parents or guardians of children of school age. The other Southern States have recently adopted laws similar in purport to those which have obtained in the North for many years past. There are, then, compulsory-education laws in forty-three States.

There are a few interesting facts to be observed in connection with these conditions.

1. In the South it is the prevailing custom to segregate the colored school population in separate schools, in some cases even going so far as to make it a misde-

meanor for children of one color to attend a school established for children of another color. This segregation is not decreed for pedagogical reasons, or because the educational problem of the colored child is considered different from that of the white (as it certainly is); but merely from what has been called "race-prejudice." In some compulsory-education States, like California, provision is made, for similar reasons, to have separate schools for children of Indian or Mongolian descent.

These arrangements are a long way from the appreciation of the difference in the educational problems which a closer scrutiny of child and race psychology may reveal.¹

2. The non-compulsory States do not exclude any class of children from the public schools, which are optionally open to all children of certain ages. The natural conclusion is therefore that these States cannot discriminate against difficult, defective, or feeble-minded children. Yet the provisions for these classes of children do not seem to be adequate, nor is their problem stated distinctly. In almost all States, however,² where a compulsory-education law has existed for some time, it is definitely stated that children whose physical or mental condition is such as to make their attendance at school inadvisable, may be excused. In some States medical examination is provided for such cases. This clause refers not only to children suffering from temporary or infectious disease; but likewise to the deaf and

¹ Cf. Chapters III, IV, IX, and XI.

² Except Iowa, where a child may be excused for "sufficient reasons" by a court of record; Michigan and New Mexico, where only physical unfitness is mentioned; Porto Rico, where physical or mental incapacity is not mentioned at all; and West Virginia, where some "reasonable cause" may excuse a child from attendance.

the dumb, the blind, the epileptic, the crippled, the otherwise disabled, and also to children of "defective" or difficult mental development, including the feeble-minded. In a number of States (and communities) there are also special provisions empowering school boards to exclude from school those children whose continued misconduct makes their further stay in the schoolroom undesirable. Compulsory education for the deaf, dumb, and blind children is provided in California, Indiana, Kansas, Maryland, Massachusetts, Michigan, Montana, Nebraska, New Jersey, New Mexico, North Dakota, Oregon, Rhode Island, South Dakota, Utah, Vermont, Washington, and Wisconsin. This, however, does not imply in every case that the State provides the instruction or the institution.

It should be added that even in some of those States and communities where public school systems have been developed to include day school classes (so-called special and ungraded classes) for certain groups of exceptional children, especially for what is loosely called the "sub-normal," parents cannot be legally compelled to submit to the removal of their children from the regular class into a special class.

Failure to Provide for Excluded Children.—The question arises: What provisions are in existence to meet the cases of children to whom the public day school is closed?

This question is not easily answered, as there is no complete compilation of all the school laws and provisions existing in the different States and municipalities. The main difficulty confronting the investigator is the fact that provisions for children are divided among various official departments, the educational department

being the least concerned, legally speaking, in the care of the exceptional child who is largely under the guardianship, very unjustly so, of the departments of charity and correction, health boards, and other non-educational agencies. Besides, there are marked differences between State provisions and provisions made by chartered municipalities. The codifying of all these various conditions is therefore very laborious. Even the publications of the United States Bureau of Education do not contain complete information, or readily accessible material, and inquiries have only shown how much need there is for a comprehensive tabulation of all existing laws, provisions, institutions, etc. The author has culled some interesting data from the material at hand, although it is not impossible that some of his details may be incomplete or even inaccurate.

One conspicuous defect may be mentioned first. There are States where children are exempt from attendance whose parents are too poor to send them to school decently clothed. Nowhere is it mentioned what is to become of this miserable class of children, unless it were that they will sooner or later be picked up by truant or police officers as "vagrant, neglected, dependent," perhaps even "criminal" children. There seems to exist no legal provision for caring educationally for these unfortunates until they are picked up by charity, or until they come under the control of penal law, that is to say, after they have drifted onto the refuse heap of society.

While the *poverty plea* for the exemption from school attendance is distinctly incorporated in the laws of such States as Colorado, Arkansas, Connecticut, Missouri, Tennessee, North Carolina, Nevada, North Dakota,

and Utah, only eight States have laws to allow clothing and other necessities to be given to indigent children so that they may attend school. Clothing is provided in many State institutions for blind, deaf, and feeble-minded children. But for normal children from poor homes it is not provided in forty-one States until they are picked up as transgressors from the street.

Here, as in a number of other things pertaining to children, too much is yet left to the initiative and charity of private individuals and organizations.

When it comes to the *delinquent child*—the child whose chances for right living have already been prejudiced by the neglect or ignorance of those responsible for his bringing up—provisions become plentiful. Penal institutions for the young, whether they are called reformatories, industrial schools, State homes, or what-not, have existed in all States for many years, and the method of committing children or youths to them is everywhere very much the same. It is largely a function of courts and police, although in some instances the school authorities have the first word in the matter. This latter arrangement is found where there are truant officers appointed by the school boards, and where there are truant schools under the management of the school authorities. These truant schools are often styled “parental schools.”

With the exception of some of these parental schools, there is too much of prison régime and too little of truly educative discrimination and training in the reformatories and industrial schools to which the youthful criminal, and what has been called the “incurable child” are committed. In many cases these children are handed over by the courts to private, often denomi-

national institutions, not all of which are conducted on psychological principles.

With some notable exceptions, even the industrial training which the offenders receive is hardly educative in character. *Correction*, reform, is nominally one of the aims of commitment; but the organization of these institutions is too plainly prison-like to make correction an educational element. This judgment does not fit all, but most of these places, and it is notable that few have educators as heads or superintendents, and that they rarely form an articulated part of the educational system of the State or community which maintains them.

Truant schools are the nearest approach to a rational treatment of the habitually vagrant and idle child, as they recognize the educational character of the problem most readily, even though the method of commitment is often punitive. Even here it is only a matter of recent progress that the state of truancy is becoming appreciated as a developmental symptom.

Children's Courts.—The establishment of children's or juvenile courts, with special judges to preside over them, and often a staff of medical officers connected with them, also the system of *probation*, have done much toward developing a better understanding of the youthful offenders and of the causes of their delinquency. The main portion of the work, however, has been done by private charitable societies, with their visiting nurses, friendly visitors, and field-workers of different kinds. Even the probation system is yet too loosely allied with the school system, and the methods of dealing with child delinquents are still so unscientific that much further research and organization are necessary to make a solution of the problem possible.

Legal Provisions for Subnormal and Abnormal Children.—"Incorrigible," delinquent, and truant children are not yet recognized as suffering from impaired potentials, being potentially normal (*cf.* Chapters VI, VIII, and X). But even for those who are commonly understood to be "defective," that is to say, mentally defective, or physically defective, no clear system is generally followed in States and communities. To quote from a letter received from the United States Bureau of Education:

A number of States provide for the compulsory education of the deaf and the blind, but such provisions are not usually incorporated in the general compulsory laws.

It is not customary for the States to require local school corporations to provide special schools for their deaf and blind, since the care of those unfortunates is generally considered a State duty. Certain States, however, specifically authorize the districts to maintain such schools, and some do so.

State provision for the feeble-minded is not universal, but provision is made for such children, more or less effectively, in perhaps the majority of the States. I am not able to make general statements with confidence concerning the laws for the care of the mentally deficient, however, for such laws are often classified with those relating to charities or the insane, and I am not by any means sure that our information upon that subject is complete. It is not customary to establish State institutions for merely dull or backward children, nor are they excepted from the compulsory attendance laws. So far as I know there is nothing to prevent any school board from segregating such children in special classes.¹

Concerning children of sound mind but with crippled or deformed bodies, the laws are silent in most of the States. In Illinois boards of school directors may establish schools or classes for them, and in Wisconsin they may be sent to the State public school for neglected or dependent children (!)

¹ *Cf.* p. 382.



FIG. 37.—Main court-room, Children's Court, East 22d Street, New York.



FIG. 38.—Small court-room, Children's Court, New York. Judge Hoyt sitting in "The Heart of the Children's Court."

Such schools are without legal obligation, and the most that any State does is to authorize them. It may be assumed that the constitution and laws of every State require that provision be made for the education of all children of stated ages, and nowhere do we find that children with crooked legs are excepted. These children are not compelled to attend school, but if they wish to do so and if the proper authorities see fit to provide for them, there is no legal reason to the contrary, and permissive laws are superfluous.

This is true enough. But if we remember the demands made at the close of the previous chapter as to provisions for the relief and adjustment of the problem of the exceptional child, we must recognize that legislation for a suitable education of all children of school age is still imperfect and obscure, and that for a great percentage of handicapped children—those that are in need of specialized educational facilities—there are no laws compelling and facilitating their attendance at school. They are left to the tender mercies of ignorant and often criminal parents and guardians. For the very ones that would need education the most to fortify them against the dangers of physical or mental infirmity practically nothing is done. It still requires much persuasion to convince legislative bodies that appropriations for handicapped children are necessary investments; that it is false economy to save on the educational side and then to spend many times as much for meeting the situation caused by the presence of derailed, defective, ignorant, and vicious elements in society.

Not because the author believes in the correctness of the dire prophecies uttered by the advocates of "*natural selection*" in the affairs of men, but merely for the sake of completeness of the argument, reference may be made here to the warnings of a certain school of physicians

and sociologists who claim that progress in curative and preventive medicine is decreasing the race's hard-won immunity to certain bacterial diseases and bringing about a weakened race. They point with emphasis to the ancient practice of killing the weak infants, allowing only those to live who gave promise of health and strength. The same argument is used against the making of provisions to give backward, "different," and handicapped children their chance. They claim that those who are unable to maintain their independent existence unimpaired in the struggle of individuals should be allowed to perish, so that the "fittest" may survive. This is a convenient philosophy for the policy of "*laissez aller*," for those who believe in might above right, in the supremacy of the strong over the weak. Not only, however, is this philosophy apt to be wrecked on the shoals of criminality and pauperism—having to pay for its own folly in terms of police, courts of justice, prisons, almshouses, and general social unrest and insecurity; it has been demonstrated over and over again that these apparently weaker by-products of civilization have in them a dynamic force of considerable magnitude which can be turned toward constructive social activity. The first chapter of this book treats of these conditions quite fully. In a previous paper by the author¹ mention was made of one group which, measured by the ancient standard of physical strength, would have been condemned to perish—the group of neurotics, which nevertheless has furnished to mankind leaders of thought and action, of ideals and of ethical uplift.

Extension of the Compulsory-Education Laws.—The National Education Association, in its annual meeting

¹ "Sane Eugenics," published in *Educational Foundations*.

of July 13, 1911, at San Francisco, Cal., embodied in its declaration of principles the following resolutions bearing upon the problem of exceptional children:

Realizing the fact that a large percentage of children whose physical and mental peculiarities require special methods of education are still to a great extent outside the scope of the compulsory-education laws, and that the presence of the exceptional child in our modern civilization constitutes a problem of the greatest import, it is the sense of this Association that the compulsory education laws of States and communities should be so amended, developed and extended that they shall be made to apply to *all children of school age*, without exception, and *provide for their training*; further, that the laws should recognize the difference between the chronological age of a child and his maturity, and that the *school-age limit* of each individual child be determined by requiring the child to meet physical and mental tests, even though the child be in years above the age standard; in other words, a child's actual age should be determined by physio-psychological data corresponding to the normal standard for the age limit required by law. All children or persons failing to meet such maturity test at the extreme school-age limit should remain under public supervision and control, either until they reach such maturity, or permanently.

The same principle should be the guide in determining whether a child is fit to be employed in any occupation. Not when a child is fourteen or sixteen years of age, but when he possesses the maturity of body and mind proper to the normal child of that age, should he be released from the guardianship of the State or the community. *Child-labor laws* should be so modified as to meet this requirement.

These paragraphs were submitted to the committee on resolutions by the author, himself a member of the committee; they embody the same demands which were contained in the resolutions proposed and adopted a year before at Boston by the department of special education of the N. E. A. The wording is not quite in

accord with the ideas presented in this volume, but clear enough to be revised in the sense of the author's own statements.

The San Francisco resolutions scrutinize the age limitations as stipulated by the compulsory-education laws. They demand that a distinction be made between the age of a child, or person, in years, and what we may call maturity. Normal standards, as we have seen,¹ are difficult to determine with absoluteness and accuracy; but normal maturity can be approximately ascertained by appropriate tests, such as have been described in the second part of this book. It is now demanded that compulsory laws be so amended that they compel attendance not for children between the ages of 6 and 16, for example, but for children who are mentally the equals of normal children representing the corresponding periods in a child's life. There are children who, at the age of 6 are still infants mentally, and perhaps physically; and others who, at 16, are still in an underdeveloped condition. Again there are children, as we have seen, who are rapid growers, mentally and physically, and should not be compelled, although below the chronological age, to remain in school when they have reached that maturity of mind and body which the law is intended to safeguard before the child is dismissed from the educational obligations which it owes the community.

The demand that all children or persons failing to meet maturity tests (such as will determine the individual's ability to take care of himself as far as a child of that age can do so) shall be under public supervision and control, either permanently, or until they reach

¹ Cf. Chapter V.

maturity, is far-reaching in its effect. Even now a child is not removed from the guardianship of his *parents* until he reaches what is called *majority*, as he is not considered sufficiently self-directing, as an independent member of society, before that time. These provisions are made on the supposition that the child has a fairly normal growth.

But the demand referred to in the previous paragraph gives to organized society the function of control of all persons who are incapable of taking care of themselves, irrespective of parental guardianship; or incapable of competing normally with others for an independent place in life, on the basis of true efficiency; or who may become a menace to society at some time in their career. This function implies prevention instead of an uncertain cure, or instead of eventual pauperism or criminality. It implies the forestalling of evil tendencies instead of first letting them run wild and then running after the evil-doer. It means beginning at the right end of the line instead of at the wrong; saving money, and social unrest and turmoil. In this manner alone would society take a positive measure toward eradicating evil, by gradually making it impossible for immature, abnormal, and dangerous individuals to be at large and to propagate their kind.

The San Francisco resolution contains the significant provision that such public guardianship will be withdrawn as soon as an individual has reached maturity. This naturally implies that ample provisions must be supplied to give those children who are merely backward, slow, or non-conforming, full opportunity for developing their natural gifts. To them this guardianship really means an educational franchise—a liberation

from the bondage of ignorance and inefficiency, an opportunity for their native intelligence to assert itself, a rescue from undeserved failure.

This guardianship by the body social may necessitate eventually a rescue of the child from economic pressure. Just as we are now having *mothers' pensions or stipends*, we may have to have *children's stipends* to secure for them the benefits of an education sufficiently prolonged to put them on their feet.

The demand has its effect, of course, also at the other end. For the exceptionally bright child, provided his body is adequate to the demands of his mind, the possibility of an earlier independence should be secured, and we may even modify the laws of majority for them so that they may be free from parental guardianship at a time which is commensurate to their rate of growth and development.

CHAPTER XIX

EUGENIC CONSIDERATIONS, MARRIAGE, AND HEREDITY

Scarecrow Eugenics.—Eugenics has become a household word in many American families, and a great deal has been said and written about this new science. It is held up to our thoughtless youth of both sexes as a sort of scarecrow, to frighten them into good behavior. Of course it really means the study of the laws which govern the production of healthy offspring. As such it is an interesting and helpful study for all thinking men and women, and has its special message to prospective parents. Unfortunately, the laws of heredity and of transmission of characters which are at the bottom of this new science have so far been studied largely in their application to a relatively small number of plants and animals from the point of view of the breeder. A breeder is interested in controlling certain desirable points. The study of the transmission of such special traits, and of producing them by special methods is relatively simple. It is, however, not so simple to apply these standards to human individuals whose physical well-being, intellectual qualities, mental and emotional sanity, and moral character represent a complexity of organization of which psychologists and students of human nature in general are only beginning to be aware.

“The world is not yet a stock-farm,” said a news-

paper writer in commenting on a previous article of the author on this topic. And he continues:

That there is a foundation of good sense in eugenics goes without saying. But the most sensible theory may be pressed to ridiculous extremes. Marriages are not merely breeding experiments. Men and women will never consent to be mated as if the world were a demonstration stock-farm. The true marriage is a union of affection—a happy comradeship of two congenial chums. Either party to the contract may lack physical perfection and both be entirely content. Milton was blind, Pope a hunchback, William of Orange an asthmatic and dyspeptic, Heine a lifelong invalid, Stevenson a consumptive. The world could spare a million physically perfect athletes much better than it could spare the immortal works dedicated by those sick and crippled sons of genius to the happiness and gain of the ages.

Restriction of Marriages.—An unfortunate interpretation of the new science of eugenics has led legislatures to dabble in the field of natural selection. Laws have been enacted to make marriage dependent upon *clean bills of health* for both contracting parties. Other enactments demand the *sterilization* of the so-called unfit.

There are, however, two sides even to the most reasonable-looking proposition.

Restriction of marriage, for instance, is a two-edged sword. It may, of course, prevent to some extent the mating of partners unfit for one another and who may produce unfit offspring. But *it will never regulate passion*. Passion defies law. And passion, which is, after all, God-given, is sometimes sounder than law. Of course, what is meant here is not the mere low animal passion of sex-gratification, but that highest of all human passions, the theme of the songs of all poets, of the dreams of all philosophers—love. How elemental this

passion is, how it is the mainspring of all human actions and of all human progress, even the gentle German poet, Schiller, has recognized when he sang:

“So lange, bis den Bau der Welt
Philosophie zusammenhält,
Erhält sie ihr Getriebe
Durch Hunger und durch Liebe.”

Love defies mere cold reasoning, and it is a question whether the instinct of love does not more often lead along the right path than the little bit of fragmentary reason which men may boast of. Reason is a spark of the divine fire, true enough. But it is a very little spark as compared with God's wisdom, which has implanted in the human heart these three great things: faith, hope, and love—which cannot be defined in human terms. They are reverberations of the eternal in the human soul. And the greatest of these is love.

The more difficult it is made to contract marriage the stronger will be the temptation to enter into illegitimate matings. Defiance to law and to accepted institutions on the part of parents adds an element of danger to children resulting from such union which is absent from the “regular” family, no matter how well or ill-mated the parents may be otherwise. The illegitimate child is born with a stigma, without taking into account other possible handicaps, in physical development, intellect, or disposition. The innocent victim of “illegitimate” relations often grows up in an unwholesome and discredited social environment which prejudices his best chances from the start. On the other hand, it is often found that the “child of love,” the “illegitimate” child born of normal parents who defied the established order

of things, bears the stamp of strength of character and even of genius.¹

We may, of course, have to be temporarily satisfied with some makeshift laws which offer a modicum of protection to society from the effects of ill-advised matings in which animal passions or recklessness were the determining factors. As long as we cannot rely upon the ability of certain classes of our population to realize the grave responsibility implied in the marriage vow, we must have immediate means of control, as far as it goes, in our power. To many, alas, the sacred mystery of human life and procreation is a sentimentless, commonplace affair—nay, even a joke, more or less unclean. For lack of anything better we may for the present need to invoke in some manner the majesty of the law for such, to inspire some semblance of awe.

It is, however, likely that other and more effective measures can be devised to accomplish the same end. One of the gravest dangers, for instance, comes from the *transmission of venereal diseases*. If venereal diseases were made *reportable*, as is the case with other virulent contagions, much of the danger of undesirable mating would be avoided. There is at present no State in the Union where syphilis, gonorrhea, and other venereal conditions, primary or secondary, are included in the compulsory list of reportable diseases.

Sexual Education.—Spreading proper knowledge on the wonders of procreation will also reduce the dangers of ill mating. From this point of view the recent agitation for training in sex hygiene is intelligible. But even this propaganda has suffered from the infusion of hysterical sensationalism, from dwelling on the wicked

¹ Cf. p. 228.

and horrible features of perverted sex instinct. Problem plays; moving-picture shows on the social evil and the white-slave traffic; the formation of school classes, without proper discrimination, for teaching the biology of sex; and an emotional (erotic) agitation in general are apt to do more harm than good. They appeal to curiosity and may dull the natural sense of modesty and privacy.

Chapter XI of this book contains pertinent remarks on sexual education.

Rarely has a saner statement been made than the one which Doctor C. B. Bardeen, dean of the medical school of the University of Wisconsin, made to the editor of the *School Bulletin* (Syracuse, N. Y.), and from which the following sentences are quoted:

I remember when in Baltimore being much impressed with the truth of a remark made by Judge Morris, who had had to preside at a trial in which much testimony concerning the sex-organs and their physiology had to be introduced. He said the trial made him quite uncomfortable; that healthy people did not think much about the sex-organs, and he in all his life had not given them as much thought as during the trial, and hoped he would not have to again. Curiosity, passion, and idleness are the only features, outside of medicine, that call attention to the sex-glands; and of these the first two are essential, the third being merely a contributing factor. Public talks to children will be pretty certain to arouse curiosity. They certainly will not subdue passion. In so far as curiosity concerning sex matters is spontaneous and natural, it may be best turned in legitimate directions by quiet private talks with pure-minded friends. . . . On the other hand, every effort should be made to suppress all of the many features that arouse an unnatural and unhealthy interest in sex. So far as passion is concerned, it can be controlled only by the habit of self-control and the right kind of personal ambition, and these can best be cultivated in the young without reference to the physiology of sex.

To throw the burden of sex instruction and sex ethics upon the schools is but another symptom of the modern tendency to make the school the vehicle of most of those influences which heretofore have been the privilege and sacred function of the home. It signalizes the progressive dissolution of home life.

Sterilization of the Unfit.—Admitting that we need the unfettered normal instincts of love and selection, guided by wisdom and self-direction, in establishing conjugal relations, and proper constructive and preventive methods in education regarding these relations to conserve the physical and spiritual welfare of the coming generations, we have to consider the problem of the "unfit" who are of our day. A seemingly simple and radical measure recently advocated, and legally enacted in some places, is the sterilization of the "unfit." In weighing the conflicting arguments for this measure we are confronted with considerations of the deepest import. Its advocates may seem justified in their course by pointing to obvious specimens of gross physical and mental defect. Of course there are such degenerates and defectives of an unmistakable type. It is perfectly natural that we should not wish their kind propagated. But the danger of perpetuating these types can be materially minimized by establishing well-regulated custodial care for these unfortunates *before they reach the age of puberty*. Certain classes of defectives are naturally sterile, and the stock would die out in a few generations unless fresh, healthy blood were infused.¹ And we must not forget that the number of these patently defective persons is small. To show how

¹ Cf. "The Career of the Child," chap. XIX, "Criminality in Children," p. 314.

erroneous it would be to treat feeble-minded heredity as a simple problem, the following report which appeared in the public press a few years ago may be quoted:

Nothing in the brief history of that newest of the sciences, eugenics, has been so baffling as the existence of the intelligent children of feeble-minded parents. There are on record instances of boys and girls springing from a degenerate ancestry going back some generations. Yet those boys and girls are sometimes very creditable specimens of humanity. The facts in their cases are not less puzzling than the splendid children resulting from the union of alcoholic parents who were studied at length by Doctor Karl Pearson a few years ago.

Instances of this kind prompt Doctor Charles B. Davenport, of the Carnegie Institution, to propound a theory on the transmission of the feeble-mindedness of a kind, notes *London Nature*, very different from that suggested by himself and Doctor Weeks two years ago. According to Doctor Davenport's earlier view, feeble-mindedness and epilepsy are both due to the absence of a "gametic" or hereditary factor, the presence of which is necessary for normal development. They are thus transmitted as a simple "recessive" or latent character which might appear in either or both of these forms.

Results quite incompatible with this are yielded by material just collected by Professor Davenport for the Eugenics Record Office, on Long Island, in New York. Another and more complex theory is suggested. Thus, when two feeble-minded parents whose defect is of the same type are mated, all their children will reproduce it. Where, on the other hand, the type of mental defect of one parent is different from that of another's, none of their children are necessarily feeble-minded at all. In the language of the report¹ issued by Doctor Florence H. Danielson and Doctor Charles B. Davenport, after their careful investigations:

"We may find one case of feeble-mindedness wherein the individual is cruel and keen in the pursuit of mischief, but unable

¹ "The Hill Folk," published August, 1912.

to learn, and another case in which he is kind and learns quite readily, but is shiftless and devoid of judgment, and the ability to apply his knowledge. Such instances seem to indicate that these different traits which characterize the types of feeble-mindedness may furnish a truer basis for a theory of inheritance. One combination of certain traits presents one sort of feeble-mindedness and another combination another sort. Working on this hypothesis, it may be possible to obtain from two parents whose defects are due to different traits (or the lack of them) a child who may be superior to either parent as a member of society. For instance, if such traits follow the Mendelian principle, a man who is industrious but apathetic and unable to connect cause and effect (*i. e.*, lacks good judgment) so that he cannot compete in business, married to a shiftless woman who is keen and shrewd, even to a vice, may have offspring in which the father's industry and the mother's mental ability are combined so that they may be superior to either parent. For if the feeble-mindedness of the father's type and that of the mother's type are gametically independent and each recessive to the normal condition, they may produce normal children.

"The analysis of the data, then, gives statistical support to the conclusion abundantly justified from numerous other considerations, that feeble-mindedness is not an elementary trait, but is a legal or sociological rather than a biological term. Feeble-mindedness is due to the absence now of one set of traits, now of quite a different set. Only when both parents lack one or more of the same traits do the children all lack the traits. So if the traits lacking in both parents are socially important, the children all lack socially important traits, *i. e.*, are feeble-minded."

This definition of feeble-mindedness is most interesting, especially when compared with the definition given in Chapter IX of this book, basing its presence on the absence of "common sense." Nevertheless, the discussion just quoted would seem to show that it refers to a condition so vague and obscure that it may be applied to a very large number of persons in various walks of

life.¹ The author is not sure but that many rather eminent characters, men and women who have contributed vitally to the sum total of human achievements, would fall under the definition of feeble-mindedness as "a legal or sociological term," having been quite incapable of commercializing their genius, and having been total failures as business assets. Besides, the discussion shows how much theory there is still in eugenics, and that we have not yet been able to marshal all the facts and to organize them in the form of clearly defined and universally applicable natural laws.²

Collection of Data.—The case of the feeble-minded and the mentally defective has in recent times been so sensationally and loudly discussed that many people have been led to think that the science of eugenics is mainly concerned in preventing the breeding of the feeble-minded. The small feeble-minded portion of our population has been held so close to our eyes that it looked big enough to crowd from our vision the many other problems of a eugenic nature. The broad practical possibilities, however, embrace *constructive measures for mankind as a whole*, not merely remedial provisions for the plainly unfit.

We are warned that feeble-mindedness and other mental defects cause crime and prostitution, and that

¹ Compare with these statements the utterance of Superintendent Johnstone, of the Vineland (N. J.) Training School, who said in a discussion at the New Jersey Conference of Charities and Correction, in 1916: "We were told we must look out for immediate facts, because a lot of people are called feeble-minded who are not feeble-minded. We were told this morning that many who were called feeble-minded by the supposedly best psychologist in the country were helped by glasses."

² A careful study of the "Medical Symposium" will reveal some of the fundamental facts of hereditary transmission in terms of biological function.

consequently we must prevent the mentally defective from propagating their kind. But the statistics which are given us to show the danger of transmitting undesirable traits are somewhat doubtful. At one time the author saw a chart in which the family history of two inmates of a certain lunatic asylum were supposed to be traced. The two were found to be related to each other a few generations back, and about 1,000 progenitors and relatives were charted. They were neatly classified as having been worthless in one way or another, having been feeble-minded, insane, inebriate, paupers, or what not. The question arose how in the world the investigators had been able to obtain information reliable enough to make the diagnosis of so many dead persons for tabulation. The manner in which such cases are tabulated is explained in a book which has become well known of late, and in which two branches of the family of a certain youth of Revolutionary times are traced. It says there:¹

In determining the mental condition of people in the earlier generations (that is, as to whether they were feeble-minded or not) one proceeds in the same way as one does to determine the character of a Washington or a Lincoln or any other man of the past. Recourse is had to original documents whenever possible. In the case of defectives, of course, there are not many original documents. Oftentimes the absence of these where they are to be expected, is of itself significant. For instance, the absence of a record of marriage is often quite as significant as is its presence. Some record or memory is generally obtainable of how the person lived, how he conducted himself, whether he was able to make a living, how he brought up his children, what was his reputation in the community; these facts are frequently sufficient to enable one to determine, with a high degree of

¹ Goddard, "The Kallikak Family."

accuracy, whether the individual was normal or otherwise. Sometimes the condition is marked by the presence of other factors. For example, if a man was strongly alcoholic, it is almost impossible to determine whether he was also feeble-minded, because the reports usually declare that the only trouble with him was that he was always drunk, and they say if he had been sober he would have been all right. This may be true, but, on the other hand, it is quite possible that he was feeble-minded, also.

After some experience the field-worker becomes expert in inferring the condition of those persons who are not seen, from the similarity of the language used in describing them, to that used in describing persons whom she has seen.

It is obviously impossible to consider this method of gathering information as scientifically reliable. The definition of mental defect is yet too vague; the methods of determining the mental status of an individual are yet in the process of development. We know too well how easily misjudged a man is by his neighbors, and how indistinct the memories even of our own departed friends become in our minds after a short time. If we feel that we know something more definite about historic figures like Washington and Lincoln, it is because we have, of course, considerably more documentary information of them than we have of the obscure dweller in the obscure village. But history often reverses the judgment of contemporaries, and the inside history of even such heroes is sometimes very different from what is popularly known.

We can never have anything like a reliable history of an individual and his family until we have ample and trustworthy vital statistics enforced by law, and suitable methods of testing and diagnosing the mental and moral status of the living.

The author's own investigations have taught him great caution in accepting such family charts as proofs. We are not quite sure yet of the best methods of testing the mental caliber of the *living*. Many of those who have been put down rather low in the scale of intelligence will surprise us by becoming perfectly useful citizens as soon as their economic conditions, their environment in general and, with this, their opportunities, are improved. To judge the dead who can no longer defend themselves or give counterproof after relief from pressure, on the basis of unprovable reports, seems very unfair. Many a person has been ostracized in his community because he was different from his Philistine neighbors. He became a failure in life through disappointment. Possibly he sank to the level of despair and self-effacement through drink to escape in forgetfulness the unsurmountable prison walls which his narrow-minded neighbors had erected around his aspiring soul. We should think twice before we judge. To put down, as has been done in scientific articles,¹ a humble family living in a shack as mentally inferior to their wealthy neighbors living in a well-appointed house, is invidious. The successful neighbor may have been an unscrupulous crook in his business methods, and the dweller in the shack may have been one of his victims.²

Constructive Methods.—Evidence has been evolved that in the living generation delinquency, pauperism, inebriety, and other vicious conditions can be controlled and eliminated by improving the environment and by socially constructive methods of uplift. Almost all our

¹Cf. "The Village of a Thousand Souls," *The American Magazine*, May, 1913.

²Cf. also Chapter II, "The Problem of Efficiency."

misfits and failures can be saved if we give them the right chance. It would therefore seem reasonable to admit that at least a large percentage of the unfortunates, now set down in these family histories as derelicts and degenerates, were in reality the victims of a vicious environment and of lack of opportunity.

Stories of tainted heredity, holding up to our eyes the horrors of degeneracy, have had a depressing effect upon multitudes of sensitive men and women. It is time that we realize the world is not any worse to-day than it has been at any previous time. Yea, we are growing better. It is well enough that our social conscience has been awakened to a clearer appreciation of its function. It is needful that we face the dangers to body and soul with unflinching and seeing eyes. It is encouraging that we have learned to understand the right of children to be well born and to be well brought up.

But it seems wisest not to dwell exclusively on the negative and pessimistic side of things. Methods of preventing evil do not necessarily mean prohibitive and restrictive measures. There is positive, constructive, uplifting work to do.

An appeal to the good that is in men is better than to concentrate on punitive and restrictive laws. Teaching the young the beauty and wonder of sex and procreation, the sweetness of fatherhood and motherhood, is more conducive to morality and to the securing of proper matings and sound offspring than to teach a crude and repulsive sex hygiene. To encourage *early marriages* of the fit and strong, and to convince these that it is *their* privilege to propagate the race instead of allowing the weak to outstrip them by a preponderant

number of their offspring, leads more effectively to a rejuvenation of the race with every incoming generation than a minute regulation of the physical requirements for the marriage contract.¹ Bettering the economic and environmental conditions of the masses, improving our educational systems, developing the social conscience, giving each new-born babe his chance in life, will be surer ways to prevent degeneracy and crime than a morbid study of the mysterious laws of heredity and the clamor for sterilization laws to be applied on a large scale.

The laws of heredity in their application to human beings are still quite obscure and are pre-eminently a matter of exact scientific investigation. They cannot yet be popularized. Their study may bring many surprises, as it has already done. And we cannot, with the best of intentions and the most carefully worded statutes, control heredity. We are not prepared to apply the methods of the breeder to human matings, human intelligence, human sentiments, human souls.

Practical Eugenics.—Even with what we know of the conditions affecting marriage and procreation, there is enough sound counsel to be given to prospective spouses and parents. It is well that either partner to the marriage vow enters into this sacramental state with a full

¹ Very pertinently Florence Hull Winterburn says in the chapter on defective children in her book, "The Children's Health": "Most adults consume each day all the force nature supplies to them. They have no reserve strength to employ in parenthood. How is it possible for jaded, nervous, feeble men and women to provide that abundance of rich blood and spiritual vitality demanded by this supreme function? The offspring they persist in having get merely the dregs of their exhausted life, and must be nursed and coaxed by every device known to medical science to sustain the burdens of an existence they scarcely deem worth the while."

realization of the responsibilities implied in it, not only to themselves mutually but to the expected offspring and to society, so that the future generations—toward whose number they will contribute—may be composed of healthy and sane individuals, effective and spiritually well qualified for their functions as citizens and members of human society.

Of course there are hereditary factors. When there are diseased conditions, mental weaknesses, emotional abnormalities in either partner, caution is advisable. An otherwise sound constitution may have been weakened by inebriety, or inebriety may point toward some inherent weakness of body or character. There may be venereal disease. Either partner must realize that he or she does not only marry the woman or the man, but the whole family—socially, and as representing a certain level of culture and life habits, but also with all the antecedent physical and mental endowments and defects which will affect their offspring in their cumulative, combined, or selected traits. Headlong marriages, contracted in a spirit of recklessness or momentary passion, are doomed to produce unhappiness and to prejudice the career of the children born from them; they are the prime cause of the divorce evil, which is increasing in magnitude, and which places the children of these unions in the most precarious positions. Flirtations, unguided passion, are poor guides in selecting life partners. To allow ulterior motives, considerations of wealth, rank, title, influence, to determine the choice of husband or wife, is one of the greatest crimes against humanity and the future generations that can be committed, be it through the parents' own traditional prejudices, or through the young people's folly. If parents,

in their educational policy in the home, will take care that the natural instincts and tendencies of childhood and youth are preserved in their healthy integrity; if love reigns supreme in the home—love of that pure type which binds parents and children together with bonds that can never break—then, in the children's emotional evolution, in their sexual relation, affection will be the determining factor. And love, as has been said before, is after all a safe guide in marital selection.

Many of the hereditary influences, such as may be difficult of control, can be overcome by sanity and proper hygienic régime during pregnancy.

Early Marriages.—It has become a custom in this country to discourage early marriages. The higher education of women, which keeps many in colleges away into the third decade of their age; the economic independence of women who find lucrative employment, which they are unwilling to sacrifice for the duties of married life; and a general tendency toward lengthening the period of "freedom," have contributed their share to this condition. On the part of the young man it is the desire to place himself firmly on the ground of economic independence in the fierce struggle for existence which prompts him to postpone the founding of a family, with the added responsibilities. These causes may be understood, even though they are deplorable. Another less reasonable cause is the disinclination of young people to put up with a modest manner of life in the beginning. They do not know or care for the joy of building up, by happy co-operation, a home of their own which is distinctly the expression of their own evolution in the married state. They think that the style and luxury which some of them have enjoyed in their

parents' home are indispensable to their happiness; they want to begin where the old folks have left off.

But postponement of marriage is a sad thing in many ways. The first fire of youth is burnt out when the young man finally takes his bride into their common home; life has already been tasted at many points, and not always in the purest sense. The physical development of the woman who waits to be married late is prejudicial to childbirth, and at least the first child is the sufferer of the consequences.

As soon as marriage is consummated home life begins. We shall consider the "eugenic" conditions of home life, and the circumstances which determine a healthy growth of childhood in the home, in the next chapter, briefly, at least.

CHAPTER XX

HOME LIFE AND HOME EDUCATION

It is, of course, impossible to treat exhaustively in this book all the problems under this head. Only a few salient points can be mentioned, leaving the bulk of the argument to other opportunities.¹

Unwelcome Children.—One of the saddest spectacles in any home is the unwelcome child—the child that came after unsuccessful efforts were made to abort it. It is invariably doomed to develop unwholesomely in some way. While, under very special circumstances, it may be permissible to prevent conception (there is a movement among a number of well-known and well-meaning sociologists to have “regulation of births” by preventive measures legalized), it is nothing short of criminal to kill the budding life. Artificial abortion is justly placed on the statute-books of all civilized communities as a crime against life and society. It is unfortunate enough when the condition of the mother should cause still-births and miscarriages. As a matter of fact, these conditions may affect the physical and mental health of the children who are born after such birth-failures.

The percentage of reported still-births and miscarriages is higher than may be thought, and it must be

¹ Parts of this chapter, in a somewhat different form, were first published in *The Mother's Magazine*.

remembered that most of the artificial killings of embryos, and of abortions, are kept secret. This is a disgrace to modern civilization.

No one ought to enter the state of matrimony who is not willing and anxious to take the responsibility of married life, of parenthood. In choosing a husband or a bride, be sure that your prospective life partner loves children and wants children. Marriage is not merely a physical union of the sexes; it is a sacred union for the propagation of the race in which both partners should wish to contribute what is best in their physical, mental, and ethical selves.

"Marriage is a matter of more worth
Than to be dealt in by attorneyship."
—*Henry VI.*

The Sacrament of Matrimony.—In other words, it is infinitely more than a mere civic contract. It is as much a spiritual union as it is a union of bodies and hearts. Shakespeare, like many others, calls "God the best maker of all marriages"; and truly, were it not for a divine spark to electrify the emotional relations between husband and wife, these relations were little more than animal passions. The very purpose of matrimony, physiologically speaking, viz., the propagation of the human race, the production of offspring, is in its very essence an approach toward the divine privilege of creativeness. The sweetness and the miracle of this ever-new creation of human life, full of promise and potentialities, can never be expressed in its completeness by mere words. It can only be felt, and constitutes that sacred bliss which makes human love and marriage the sweetest thing on earth; that which sanctifies the nup-

tial relations as much as it does the love of parent for child. It is indeed difficult to say which is the holier and more felicitous thing—the love of parent for child or the love of husband and wife. They are both one, one intimately interwoven with the other. Milton hails “wedded love” as the “mysterious law, the true source of human offspring”—for wedded love has this distinction from sexual license that it recognizes the full dignity and the happy but awe-inspiring responsibility of this union of man and woman. Entering upon it, the married couple at once assume grave functions, not only toward each other but toward the expected offspring, and by force of these parental functions, they assume a tremendous obligation toward humankind, present and future. Sexual license dreads the consequences, or ignores them. With it children are an accident to be avoided. In wedlock the advent of the child marks the completion of happiness.

Health of the Prospective Mother.—It should not be necessary to assert with special emphasis that women must, during their pregnancy, endeavor to secure for themselves the most auspicious hygienic conditions. Too many, alas, enter into this state poorly equipped physically. From a circular letter of the “National Consumers’ League” the following two paragraphs paint the picture of starved girls who, when plunging themselves into the current of love and marriage, will be apt to starve their offspring in the womb:

“Sometimes I just long for a good thirty-cent meal,” said a girl who was earning \$6 a week. “But I never have the price in my pocketbook. I get so tired of those fifteen-cent dinners year in and year out, that I think often I’d rather not eat at all.”

This hopelessness—the feeling that expenditures must forever be hedged about by petty savings, stands out most prominently in stories gathered from girls in stores and factories. Their budgets mirror starved and dreary lives.

It is, of course, not only the lowly girl who is thus doomed to prejudice her offspring, but many mothers of means injure their vitality during this most important period. Gay women who will not forego the pleasures of the social swirl; pampered women who never give their bodies a chance to function actively and vigorously will be responsible for the production of children bearing the stigma of weakness from birth. Proper nutrition and exercise, the following of the most patent laws of health, are necessary to secure for the unborn child such chances as will grant him a normal and effective existence.

Naturally the emotional and mental condition of the mother during pregnancy plays a very important part. Anxieties, stress of emotion, excitements, fears, and other psychic influences leading to hysteria, neurasthenia, and general nervous depletion are responsible for much unhealthy child life. An unhappy mother may have children predestined for unhappiness.

The father's part during this period is to do all in his power to remove from his wife's path all those obstacles which would cause ill health and unhappiness. He has two lives in trust, and he should be conscious of his wonderful privilege to watch over the mystery of creation coming into his own life—the rebirth of his own self blended in sacred communion with the personality of another self dear to him.

All these things may sound commonplace and self-evident. The author wishes they were.

Care in Labor.—Much and often irreparable damage is done at the birth of the child, through unskilful handling. The evils of midwifery are only beginning to be controlled, through licensing midwives after examining them for fitness. Poorer mothers will for some time to come have to rely upon midwives, perhaps, but some method should be found to regulate assistance in labor by proper legislation, through the agency of boards of health, with the obligation of immediate registration of births. Infection in labor, on account of lack of cleanliness, transmission of disease from assistant to the parturient or to the child is all too frequent. Ophthalmia neonatorum, the dreaded disease dooming a child to blindness, is as often the result of this cause as of venereal infection of the mother herself.

It will always be best to place a prospective mother in charge of a reliable physician and obstetric nurse. Physicians will have to exercise great care in employing and supervising the nurse; it is the author's experience that much damage is done by lack of judgment and conscientiousness on the part of the nurse—often entirely unknown to the physician in charge. The mother rarely has the physical and mental strength to resist the insidious influence of an injudicious nurse, and is too much at the latter's mercy to have the courage to complain to physician or husband. It is the husband's plain duty to do all in his power to secure for wife and child the best possible assistance at this critical moment. Often it is most advisable to transfer the mother from the home to a well-directed maternity hospital.

Of the care of mother and child after the first weeks of confinement, much has been written. It is unnecessary here to duplicate what can be easily read in books

intended as mothers' guides, and written by reliable authors, like Kerley, Holt, and others. But it may be suggested that from the date of the child's birth the family physician should be considered a steady and confidential adviser, not merely to be called in when the child seems sick, but to regulate, with the idea of prevention, a child's health life continuously.

A Healthy and Happy Home Life.—No "eugenic" childbirth is possible where there is not a healthy, happy home life. It goes without saying that the husband is one of the factors in the making of this home life. But, after all, it is woman who is the home-maker. She determines the spirit of the home. She is the keeper of her husband, whom she makes or unmakes. It is usually wrong to place the exclusive blame of a husband's erring ways to his debit—man is wax in the hand of woman. The worst man will, if his woman cares, fight the battles of life for her, and will be swayed in his actions and emotions by her praise or disapproval. Since women have sought so much activity outside of the home; since they have decried the home duties as menial and as drudgery; since the individual home has given way, in so many instances, to life in "family hotels," which are, in their way, as detrimental to the sacredness of the hearth as are tenements and slums, home life has begun to depreciate. Even the ordinary apartments are not homes for children; many landlords distinctly bar children from their premises, or restrict their play to common nurseries. Most homes, for that matter, are not so conducted that they offer the child a real home. They are homes for the conveniences of adults; the children are often really in the way, and have to be put out of the way, in the corner, or to bed,

so that the adults may have their life opportunities. And when the adults want to go out, unless they can hand over their children to some more or less reliable and competent relative, older child, or employee, they drag them along to places of amusement and noise, bringing them home at all hours of the day or night, exposing them to a host of physically and mentally unhygienic conditions.

The Profession of Parenthood.—Parental functions have rarely been considered in the light of professional duties. Because every one may be a parent, the discharge of parental functions has never impressed people as being a serious business which must be learned like any other business. And yet, upon a proper discharge of these duties depends not only the happiness of millions of homes, the fate of hundreds of millions of little children, their very life and death, their morality or criminality, but even the future of all the generations to come, the future of our race on the earth.

There seems to be an implied supposition that as soon as a man or a woman becomes a parent, the ability to deal with the new-born child will come to them by special revelation or by instinct. It is true there exists an instinctive predisposition in women to be helpful to tender babes; nature has indeed endowed them, like the mothers among the brute creation, with those qualities that enable them to understand intuitively the needs of children better than does the average man. But this instinct is of a somewhat general character; it shows itself as a matter of emotion rather than of intellect. A woman may devote much tender care to a child, with the motherly instinct which is her natural privilege, and yet injure her charge more than it would have been

injured had she left it entirely alone. In our complex conditions of life, instinct unguided by experience and understanding is apt to be misleading, especially as an adult has acquired so many artificial and conventional habits that natural instincts often manifest themselves in a vitiated form.

There is another way in which women are, in a general manner, preparing for the motherly duties that may await them—*by observation and absorption* of what they see their elders do. Even in their doll play, which is another form in which the native instinct asserts itself, little girls practise many maternal duties, and it is to be deplored that little boys are not rather encouraged than discouraged to play with dolls, also. For it is a great mistake to think that the father's tenderness and educational co-operation can be spared in the bringing up of children, or that he needs less preparation and enlightenment in regard to his sacred functions than does the mother.

Yet observation, absorption, and imitation do not suffice for apprenticeship in any line of human endeavor. He would be a genius, indeed, who would by imitation alone be able to make a perfect shoe, or plan a bridge, or produce a truly great work of art. There are principles to be studied, there is need of guidance and systematic practice, there must be purposeful effort on the basis of the experience of teachers.

Fröbel suggested that every girl should be expected to take a course somewhat along the lines of kindergarten training, to prepare for motherhood. One of the first schools having for their special object the training of nurses and mothers was founded in England—the "House of Educators," in Ambleside. The "Fröbel-

Haus" in Berlin has long ago introduced similar courses. During the last two or three decades the new impulse which is due to the child-study movement has had the result of arousing many parents in different parts of the civilized world to a clearer appreciation of their duties and responsibilities, and also of their sad lack of preparation for their sacred functions. Parents' and mothers' societies have sprung up and give promise of much helpful work. Lately a school of mothercraft has been established in New York. Chicago University has quite recently offered a college course in motherhood. And a new literature has sprung up intended to teach to prospective parents the gospel of the child.

Fundamental Realities.—"The home is for the child," said Reverend George R. Merrill, of Minneapolis, at a meeting of the Congregational Club of Minnesota, some years ago. "It is not fashioned by statute. It is such a union of a man and a woman that in very truth they have become a unit. The child is the expression and exponent in miniature of realities actually joined in such a union."

These realities are hereditary and environmental. The problem of heredity has already been discussed in these pages. Only a few things may further be said here under this heading.

Hereditary Elements.—It has been wittily said that a child must be educated a hundred years before his birth. This seeming paradox points to the vast influence of transmitted elements. A child is the last link of a chain the beginning of which is lost in the dim past. He will reproduce race characteristics, national peculiarities, family traits. They are all born with him. In the different issues from the same stock the mixture

of elements will vary, producing a multitude of possibilities of which the separate individuals will be the exponents. In fact, no child is born into this world under exactly the same conditions as another, even though he be born from the same parents. Each new birth represents a different period in the parents' life, and new conditions of the conjugal union. Some of the hereditary elements are physical, others are emotional or mental. It is sometimes almost amusing to observe how faithfully children revive in their young lives the peculiarities of their progenitors—the nervous twitching of the eyes belonging to some great-aunt; the form of the nose is characteristic of a grandfather; the smile is the mother's; the quick temper the father's, and the genius an uncle's. We inherit from our ancestors tendencies and potentialities of infinite variety. In nature there is no equality—there is the greatest possible inequality.

As parents we must be constantly on our guard lest our life habits have a disastrous effect upon our children's future. Many fathers whose nervous system has become depleted in the mad rush for gain have left a pernicious inheritance of defectiveness. Intemperate habits in the parents may result in constitutional weakness in the offspring. There are many mothers suffering from chronic fatigue: be it from overwork in the home or in service; be it the effect of overstimulating their nervous system by overstudy or by the excitement consequent upon the pursuance of amusement and "social duties"—their children will pay the penalty of their mothers' folly or misfortune.

Apart from those habits and conditions of the parents which have a hereditary significance, there are those,

and their number is legion, which are continued by *imitation*. Children are immensely imitative and suggestible. Every word we speak, every expression of our face, every gesture we make—in fact, all we do finds a ready echo in the child's receptive mind. It has been justly claimed that many a trait which we thought hereditary was really acquired by imitation. This leads over to the second group of influences, those of environment.

Environmental Factors.—Under environment we understand all those impressions which the child receives after birth, and which help in shaping his character. They are generally divided into two classes: those that are conveyed to the child with a direct educational purpose, such as teachings and admonitions at home and in school, and those which affect the child without such direction. The silent, undirected influences of the more or less passive environment—the influences of example, of conditions, of traditions, of experiences—are, as a rule, much more numerous and much more effective than the other. Even in the educational efforts of parents and teachers, there is a large admixture of involuntary elements so that no hard-and-fast line can be drawn between the two groups of environmental influences.

Let us be quite clear about the extent of these influences. A picture in the nursery may have as much formative effect upon the child's imagination as an actual scene witnessed in the street, or a visit to the circus. The parents' lodgings, the streets traversed in the daily walks, the locality where the parents reside; their immediate and more distant surroundings; the State; the country;—and starting again at the home

along a different line—the parents, the brothers and sisters, the servants, aunts, uncles, relatives, and kins-people in general; friends and acquaintances; the milk-man and the grocer; the people in the street, the citizens of the State—all these elements help to mould the child's soul, and were it merely by their passive presence and example, not to speak of active influences. All these factors have a peculiar educational significance—they constitute the child's setting. The spirit of the home and the parents' relation to the world of human endeavor about them; the habits and conventions of the people; the moral and intellectual atmosphere of the community, all leave their mark upon the impressionable mind of the growing child. This demonstrates very forcibly that while the child can never be too cautious in the selection of his parents, the parents in their turn can never be too solicitous in the selection and *improvement* of the environment in which they place their child. They must naturally have a deep interest in all public affairs touching upon public welfare and the healthy condition of the community in which they live, since every tree planted in a public park, every advancement in the public education and administration—or every wretched outcast met with in the public streets, every evidence of iniquity or corruption in the management of public affairs—will influence their child's salvation.

To any one who wants to have a clear-cut pen-picture of the machinery back of our politics; of the bribery, corruption, and graft which are so unhappily characteristic of community life in our great republic (and for that matter, in other countries quite as much); of the petty selfishness that rules our so-called Christian civilization, the author recommends the reading of a powerful

little story published in the July, 1915, issue of *McClure's Magazine*, "The Honesty of Honest Tom," by the well-known writer, Lincoln Steffens. We are living in a commonwealth in which it requires the most strenuous efforts of many broad-minded people, organized in the National Child Labor Committee, to fight—more or less successfully—the constant practice of many of our manufacturers and business men to exploit child life in the most ruthless manner. The revelations of the workers of this organization have been appalling. Do we want to save children from becoming diseased and broken down before their prime, to pile up the refuse-heap of human society? Do we want to rely upon organized society to establish and maintain charity and correction measures to deal with the victims of bad economic conditions and of exploitation by unscrupulous employers?

This is part of the "environment" in which our children grow up. Is it not the solemn duty of every parent to give his and her most consecrated effort to wipe out social iniquity and to purge society of those germs of physical, mental, and moral disease which are so likely to affect their own children? Alas, in only too many cases parents themselves are exploiters of their children's bodies and souls; and the deceptions they practise, the lies they tell and make their children tell, are not conducive to implanting in the youthful minds a love of truth, integrity, and uprightness. The moral principles of the average home are rather hazy.

Children Are Not the Property of Their Parents.—The old notion that children are the private property of their parents; in other words, that parents have absolute control over them—whether they are to go to

school or not, as to what profession the children must choose, whom they are to marry, what they must believe and profess, etc.—this idea is an exploded theory. There are such things as children's rights, rights quite inalienable, and among them are life, liberty, and happiness. Since the days when a Roman father could condemn his new-born babe to death if it displeased him, the recognition of these rights has gradually become incorporated in the statute-books of nations. Compulsory education laws, child-labor laws, and the like, are among the measures most notably intended for the protection of helpless children. We may educate and counsel, guide and inspire, but all our efforts must be directed toward enabling our children to become independent and self-reliant, toward developing their native individuality which we are bound to respect. We have no right to force our child into conformity with our own preconceived notions and prejudices; to predestine our child for a career which strikes our fancy or appeals to our individual standard, or even to the popular standard, of "practical," conventional profitableness; but we must endeavor to discover his natural bent, and develop the child along the line which nature has pointed out for him. Through heredity and imitation the child will anyway be somewhat inclined to reproduce his parents' type in a measure. But we may not implant in the plastic soul of the young our own opinions, likes, and dislikes; we must studiously avoid prejudicing the child, and must give him the freedom to form his own opinions and individual attitude, and must help him to develop that strength of character which is needful for the maintenance and manly defense of a conviction which is the result of spiritual growth. We can never

hope to transmit to him in their fulness those spiritual realities which have become powerful in our own lives, as the composite result of our strivings for perfection. All we can do is to imbue the child with the same longing for perfection, with the same love of the beautiful, the true, and the good, which has inspired us to form those ideals which give purpose to our own standard of excellence, and which may lead them perchance to establish a higher, nobler, more enlightened standard than ours. Every new generation stands in need of advanced ideals so that the progress of the world may continue.

Individualization in the Home.—To do justice to our children does not mean that we must treat them all alike. Quite the contrary. Each child has a very distinct personality of his own which must be carefully studied and intelligently understood. Even children in the same family usually differ widely in talents and temperament, in morals and moods, according to the varying conditions under which they came into this world. By studying their interests, in plays and games, in books and studies, in company with others and in their occupations, we shall learn to know them. Each one wants to be treated in accordance with his own particular needs—justice means an adaptation to these needs, an adjustment of educational effort to the individual case. Such justice is not a simple thing, and truly educational treatment at home cannot be easily reduced to a patent formula. The parents' closest attention and interest are required. If parents would give some of the time they devote to the fluctuations of the stock-market or of the fashions to a loving observation of the fluctuations of the soul activities in their

children, they would render a greater service to them and to the race at large than by attempting to control the price of wheat or by conducting a charity ball. Fröbel's word, "Lasst uns unsern Kindern leben!" means that we must live not only *for* our children, but *with* them and *among* them, so that we may enter into their very souls and understand the subtle workings of their budding minds. Only then can we do them justice.

Education in the Nursery.—The nursery should be a sacred place in every home. Here past and present join hands in the growing and maturing of the child. In the child of to-day we may observe the gradual unfolding of civilizing powers and factors which have been at work from the dawn of civilization to the most modern phases of human life. The evolution of the individual repeats the experiences of the race. As the savage man was surrounded by a world of wonders and mysteries which he only vaguely divined and which filled him with terror and strange longings, so the infant finds himself confronted with a world of forces which he realizes but indistinctly, and whose indefinite and infinite content and extent he learns gradually to reduce to symbolic terms, in his own consciousness, through language, measurement, organization, co-ordination. He learns to grasp the mysteries of his life by grasping with his feeble hand the objects which are nearest to him—through them he will learn to understand and interpret the possibilities of the infinite. The nursery is a temple in which the divine manifests itself in its eternal creativeness; it is a laboratory in which a new soul is formed by the thousand and one experiments which the child undertakes instinctively to build up a conceptual world through the medium of his senses, from

the messages which the outside world sends him incessantly along the wires of his nervous system.

In the nursery the foundation is laid for all future education. During the first seven years of his life a child assimilates more, "learns" more, than in all his subsequent life. Instinctively the child is constantly studying, experimenting, storing up experiences, concepts, and ideas. There is divine wisdom in his activity, but ignorant and unsympathetic parents only too often counteract his natural instincts when they might do so much to help them and guide them intelligently. Brainless chatterboxes are often thought bright by foolish parents, and coddled and indulged in; the noisy activity of the normal child is often denounced as "naughtiness." In the nursery much can be done for the training of the observing powers; there should be plenty of objects for manual and visual inspection. Children will and must touch all things, try all things. Their muscular activity must not be checked; it means health and knowledge to them. Rather let us dispense with costly and superfluous bric-à-brac if we are afraid it will be broken. Let us rather sacrifice a cherished piece of breakable material than the valuable information your child will receive from handling it. Bric-à-brac costs only money. Checking the child's instinctive tendency for inspection may cost a soul.

And let us play with the child—not so much by directing his play, but by entering into his spirit and helping him to develop all the tremendous possibilities and potentialities of his play instinct. Play symptomatizes the evolution of a child's psyche, in its various stages, from savagery to altruistic humanity. Playing with dolls, *f. i.*, is not only indicative of the parental

instinct in children, but also represents an early stage in religious development. The endowing of lifeless sticks and bundles of straw or rags with personality, the passionate tendency to treat dolls as if they were real living beings, is a relic of fetichism and idol-worship translated into childish conception. Then there is the dramatic instinct of children, reminding us of the dawn of poesy and literature. Children will embody, in their dramatic fancies, those notions and aspirations which they cherish most at the time. They will prefer, in the characters of drama and fiction, either those that are most like themselves, or represent what they feel is wanting in them. This process of involuntary self-projection will often aid us in discovering the child's real self which he may otherwise try to hide from our prying eyes.

Children's Growth and Health.—The foundation of a sound development of the child-soul is a healthy body. The child's first right is that of health. Many enough children are born into this world burdened with inherited body-weakness, suffering from the sins of their fathers through generations. To discover such inherited tendencies is one of the first duties of a conscientious parent whose constant assistant and counsellor will be the family physician. But there are many more dangers to health, and the hygiene of child life should be carefully considered in the home.

Children need plenty of light, fresh air, freedom from disturbing influences, and proper nourishment. As a rule they get little of these essentials, and many of the chronic troubles that harass our race are due to the irrational practices in the nursery. The statistics of infant mortality are sadly instructive. Children are

often treated as if they were merely little men and women, small and undeveloped, but essentially the same as the adult. The truth is that they are quite different, and that their nature varies in often rapid succession of periods. Of these periods each requires different treatment.¹ Only a few facts will be mentioned here.

There are several crises in the development of the child. The first is during the *infant period*. The infant, owing to the predominance of the vegetative functions, is subject to gastric troubles, which are generally but erroneously attributed to teething. They are due to developments in the alimentary tract, which is as yet too sensitive not to yield easily to disturbances. Infant nutrition is therefore a grave problem. *Malnutrition is one of the most potent causes of atypical or even abnormal development.*

The years from seven to nine are the *fatigue period*. This is the time when the brain has attained almost its full weight and when the functional development begins. The nervous system now prepares itself for finer adjustments. This period is characterized by the child's easy yielding to mental and physical fatigue and exhaustion. Accompanying there is often the anomaly of a dilated heart, and quite frequently evidence of cardiac incompetence, such as shortness of breath and readiness of fatigue. The danger lies in the extremely insidious character of its approach; one of the surest symptoms is the appearance of general laziness, which must not be punished, as it often is. The child should rather be rested and the demands upon his physical and mental activity should be temporarily diminished.

The time of rest granted to the child during this and

¹ Cf. p. 42, Chapter III.

the next critical period must not be counted as a loss; contrarily, timely rest will secure greater strength during the ascending periods, while *irrational stimulation at these stages will produce a lasting weakness*.

The period fraught with gravest dangers and characterized by most remarkable developments is that of *pubescence and adolescence*. It requires special treatment. It will repay the most careful study, being an age of most important physical, mental, and moral changes.

The *period of infectious diseases* extends from the second to the fifteenth year of age. An early recognition of the symptoms of infection, and energetic measures against the spread of these diseases would mean much for maintaining a better condition of public health and for reducing the death-rate. But the parent should be especially interested in the fact that infectious diseases are responsible for more other defects leading to mental and moral inefficiency than is generally appreciated. They leave even those who recover in a state of debilitation which it requires special efforts to overcome. Eye and ear defects are particularly frequent after-effects, and these in turn, as has been shown before in these pages, lead to much mental and moral disturbance. Again, impaired hearing may be due to nasal-pharyngeal obstructions, enlarged tonsils, and adenoid vegetations, which make normal breathing difficult. The "mouth-breather" has a dull appearance and is really often dulled in his mental activity. The deleterious effect of cerebrospinal meningitis, infantile paralysis, and other diseases of this kind, which have only recently been recognized as being infectious, are well enough known.

It is easily seen how necessary it is to recognize the *danger-signals* in time. Parents, like teachers, must acquire the art of reading symptoms. They must learn to recognize the first indications of disease; to know whether the backbone is straight or beginning to show a curvature; whether the hearing is normal or impaired; whether their children's vision is regular or not (head-aches are frequently caused by visual imperfections), etc. When the parents' knowledge is insufficient, the co-operation of the physician should be secured, who indeed ought to play a much more important part in education than is yet accorded to him. An ounce of prevention is better than a pound of cure. The physician, it may be repeated, should appear in the rôle of a counsellor and adviser *before* a disease has had a chance to develop rather than in that of a healer of neglected trouble. To understand the development of a child and to recognize diseases in their incipient stages, frequent examinations and measurements of the children are a valuable help: slight abnormalities in weight, *f. i.*, indicate possible functional disturbance or disease at every stage of a child's life, not only in infancy.

The *hygiene of the nursery*, using this term so as to include children of all ages, is a fruitful field of study for parents. Proper nutrition and clothing, ventilation and lighting, proper seating and exercise, sense training and mental exercise—at home and in school—all these require careful attention.

Abnormal Developments.—Disease, as shown before, is often responsible for mental and moral aberrations and defects. The results of careful examinations have shown that precocious children are, as a rule, heavier and dull children lighter than the mean for a given age.

Precocious children are usually also taller, have larger chests and wider heads than the mediocre and the dull. No child whose weight is below the average should be permitted to enter a school grade beyond the average of his age, except after such physical examination as shall make it probable that the child's strength is equal to the strain. Physical weakness often produces an abnormal mental state. In illness or convalescence, or when suffering from hunger and fatigue, most of us are more irritable than when we have our full strength. Selfishness, untruthfulness, ill temper, and the like, have very frequently a pathological basis. This is so characteristically true that we may in most cases consider moral aberration as conclusive evidence of some physical defect. Thus, if you should discover in your child some sudden moral discrepancy, do not run for the rod, but for the physician. But be careful as to what you call a moral discrepancy. In nine cases out of ten the so-called naughty child is the normal child, and the fault lies with you who do not understand him, not with the child. The healthy child must be active, noisy, boisterous; beware of the quiet child which is so often praised and petted. Refinement and self-control must not be forced before their time. There are normally quiet children, dreamers, true enough; but the majority of quiet children are more or less atypical, subnormal, or abnormal. They are either dull, or painfully precocious, or oversensitive, or diseased, fatigued, or bored. Be thankful for your noisy, healthy little savage!

Do not try to hasten your child's development; do not give him a hothouse culture; do not drive him; do not suppress his natural instincts! Let him be a child as long as he may, lengthening the "days of plastic infancy."

Misunderstanding a Child.—How easily is a child misunderstood because parents apply an adult standard to his doings! The following may be quoted from an article written by Miss Ellen M. Haskell, years ago, to illustrate the point (**Case 73**):

Reminiscences sometimes disclose the fact that the conduct of children is grossly misinterpreted by adults. The writer of the last-quoted record relates that one summer day she went to a wood-lot on her father's farm to spend an hour in being a fairy. To aid her fancy she went without her dress, her neck and arms being thus uncovered. On her return she was seen by her father, who somewhat sternly ordered her into the house to put on her dress. His manner made her feel that she had behaved in a manner unbecoming to a modest girl, and an hour of grief and shame followed her innocent and poetic enjoyment. The readiness to think evil of children arises, in part, no doubt, from the great desire on the part of parents that their children shall be free from faults and vices, but also in part from a forgetfulness of their own youth. A bad motive is attributed to a child simply because in an adult a bad motive would underlie a similar act, when in truth the child is utterly incapable, intellectually, of the conceptions involved.

Truthfulness and Obedience.—Truthfulness and obedience are thought to be the prime virtues of children. But if you find your child to be lying to you, do not be promptly excited and indignant. First investigate the possible cause. Lying may be due to a phase in the child's physical development; it may be the result of a vivid imagination unguided by the power of discrimination. There are many other causes of lying. Perhaps your child is timid, and easily frightened; perhaps he uses a lie to defend himself against your own violent temper.

And obedience? In the strict sense of this word the

child does not *owe* us obedience at all. Obedience may be merely a mechanical response, born of timidity, fear, and moral weakness, and not at all a sign of moral strength and self-control. At best it is a habit produced by enforced practice. It is the parents' business to secure their children's ready response and co-operation by treating them fairly and squarely and by inspiring them with confidence and love. Disobedience is not infrequently the result of unsocialized instincts at a time in the child's life when these instincts are unorganized or disorganized; sometimes it is the product of misguided independence, and perhaps also an evidence of a strong moral will-power. Intelligent and loving treatment will usually forestall any cases of stubborn insubordination. A child who respects his parents will respect their directions. But parents who do not command such respect; those whose course with children is inconsistent, who forbid to-day what they allowed yesterday; who act merely on behalf of their own convenience and whim; who may be coaxed, or cried, into yielding, into recalling an order, or reconsidering a restriction; when the mother is indulgent and the father strict, or vice versa; parents who discuss their children and even quarrel over them in their very presence; those who cannot intelligently lead their children's activities into constructive outlets, so that they remain destructive—such parents need not wonder that they have to contend with their children's disobedience, ill temper, and ugliness.

A True Family Government.—The discipline of the home must wisely adjust itself to the varying needs of growing children. The children must be taken into the confidence of their parents in proportion to their devel-

opment of judgment, reliability, and efficiency. Out of a monarchical form of government the family must gradually emerge into a more democratic organization, in which the children are given respectful and sympathetic hearing, and in which their opinions and votes count. Individual conditions will be modifying factors. But the underlying principles must be those of freedom, mutual regard, and co-operation, on the basis of educational insight and adjustment. If parents would think less of their own convenience and self-gratification, if there were less of hysterical emotionalism in their relations to their children, and more consideration for what is needed to develop manliness, womanliness, citizenship, much misery and much perversion would be obviated.

Here we have also the measure of inefficiency for those homes where economic pressure, shiftlessness, poverty, illness, and the thousand and one conditions which produce the dissolution of the home spirit and home opportunity, deprive the children of the uplifting influences which can nowhere be obtained but in the home. How many children in this wide and rich country of ours have the right kind of home—or, for that matter, a home at all?

One of the principal requisites for wholesome home education is that there be a bond of mutual trust and friendship uniting parents and children. A parental and filial love which does not blossom out into unrestricted confidence is a spurious thing. Parent and child ought to need no mediator; no chum or schoolmate or chance companion ought ever to stand nearer the child's heart than his father and mother. The parents must always be their children's best friends; the children must know

that they will find sympathy, that they may weep at their parents' breast when they have erred, rather than be chided and repulsed; that they will be raised and lifted up to a higher level from their humiliation by confiding in those who have given them life. Parents, convert your children as soon as they are old enough into your companions and friends, and their new dignity will imbue them with a new spirit and enthusiasm which will help them to withstand many a treacherous temptation. Make their lives a part of your own life, right along—from the time they were babes in swaddling-clothes, when they played their first innocent games, when they had their first doll, during the period of their school years, through the dangers with which the path of adolescence is beset, away into the bliss of their own married life.

During the formative period of school life, secure the most cordial and close co-operation with the school your child attends. As a rule, parents imagine they have fulfilled their duty when they send their child to the public school, or to some private school which they have selected according to their own best light. But few really know, or care to investigate, what happens to the child at school, or by what standard they should gauge the child's progress. They are perhaps ready enough to criticise and find fault, but they rarely co-operate with the school in a constructive manner. Yet school life often reveals a phase of the child's nature of which the parents remain totally ignorant. Home and school are two factors in education which can never be absolutely separated; their course must not only be parallel, but connected and co-ordinated in numerous ways.

The True Home Spirit.—In the home, mainly, the foundations of an ethical character are laid. "Home is not the place where we eat, sleep, and dress to go abroad," says Mortimer A. Warren in his valuable little book, "Almost Fourteen." "Home is the place where we share. We share not only food, shelter, and clothing, but we share a common name and blood, and common joys and sorrows. We cannot escape it if we would, and we would not if we could. The children cannot escape their inheritance, and the parents cannot escape their marriage vows."

The spirit of the home is the most potent educational factor. Make the home an ideal place, a place where love, sympathy, and justice reign supreme, where there is an atmosphere of refinement, enthusiasm, moral virtue, and strength; an appreciation of the beautiful, the noble and true; a readiness of moral courage and self-sacrifice, of simplicity, uprightness, and charity—and the children will absorb and assimilate this spirit, they will catch the inspiring infection.

This true home spirit will inevitably be based upon genuine religion. There must be, in the parents, a realization of the spiritual life which is the pivot of all phenomenal life in the soul of man; there must be a recognition of the eternal facts of creation which link us, one and all, inseparably to those infinite powers upon whose operation all life depends. Men have called these powers by different names, and different modes have been established, in the course of centuries, to worship them. The most sublime, and at the same time the most lovable of these conceptions of the eternal forces has been personified by generations of human souls under the sacred name of God. But even though, with some of

us, this divine conception has become sublimated into an abstraction, devoid of human-like personality—it is a reality at once awe-inspiring and wondrously precious. It must be like a living presence in the souls of all of us. It must be the most potent inspiration to the parent in the education of the child.

The proper religious education of children is still a much-disputed problem. We must guard ourselves against attempting to imprint upon the plastic soul of our children our own individual religious notions, symbols, and prejudices—which, once implanted there, are liable to become encysted, and to be spurious growths, obstructions to their individual spiritual development; or to degenerate into mere forms and conformities. In fine, the religious education of our children is a difficult and delicate task, to be undertaken with great care, self-restraint, and humility. Yet from the realization of a divine presence in the parent will spring the sense of reverence which is the corner-stone of all genuine religion. Let us take care that we represent to our children, in our own lives, a symbol of the divine relations. Notwithstanding the psychological fact that the idea of a *divine fatherhood* is but a symbol of the real, truly inexpressible, and unfathomable relation of the eternal powers to humankind, an idealization of human parenthood; this very idealization not only sanctifies the parental bond and renders parental influence more beneficial and powerful, but it is perhaps the nearest approach to a conception of divinity of which the human mind is capable.

Upon such homes rest the welfare and progress of the community and the commonwealth. They are the strongholds of liberty, purity, and happiness.

Such home ties will remain the strongest of all forever and ever with the child. The memory of a happy childhood, of the blissful home, of the beloved father, mother, sister, and brother, will strengthen the struggling soul in moments of doubt, temptation, and despair.

NOTE.—The problem of the boy whose home is only semi-functioning, or who is altogether homeless; of the boy whose play-life is spent in "street-land"; whose natural activities are constantly coming into conflict with the law and the convenience of the community;—the problems of providing proper recreation facilities for the mass of boys, of boys' clubs and their functions; of the responsibilities of community, school, and church; and the relations of all these factors with the problems of juvenile delinquency, backwardness, and failure: are treated in a contribution by Mr. Albert B. Hines, under the title, "The City and Her Boys," in the appendix of this book.

CHAPTER XXI

SCHOOL PROBLEMS

The problems of the home and the street are reflected in the problems of the school. That our public and private schools in their present organization do not meet the demands of an individualized training of children has been evident for a long time, not only to outsiders, but to the teachers themselves. Their difficulty is that they cannot easily overcome the obstacles which are in their way when they try to free the schools from old traditions. The problem has been plainly stated in the first chapter of this book.

A Powerful Arraignment.—In his little volume, “*Idols of Education*,” which contains some very highly suggestive criticisms of present-day education in school and university (some of them unfortunately vitiated by a complete misunderstanding of the principles of Fröbel and the play instinct), Professor Charles Mills Gayley has this to say:

The boy enters our colleges “a badly damaged article.” One-sidedly prepared, or not prepared at all, he goes through college accumulating courses, but not education; desperately selecting studies least foreign to his slender capability for assimilation, or most easy to slur, or most likely to turn to superficial ends. He is by no means always lazy, nor oblivious that now is the chance of his life; but he has no core of knowledge to which the facts he fumbles may cling, no keen-edged linguistic or scientific tools with which to cut to the heart of the matter; no

memory trained and enriched, no taste, no imagination, no judgment balanced by frequent trial, no habits of remorseless application. He has bluff but not confidence; he has promise but not power. The subjects of his study have not been correlated. The goal has been neither discipline nor intrinsic worth. He has probably never studied one thing thoroughly. He has not been guided; he has not been taught; he has not conquered work. He has been distracted; he has been amused.

Fundamental Verities.—The sad results which Professor Gayley describes are due not altogether to causes such as he has in mind. It is perfectly true that the instruction in most of our schools is one-sided and superficial; that a child rarely uses his intellectual faculties with thoroughness. But that is caused mainly by a thorough misunderstanding of the needs of the growing child mind, and of the process of civilization.

Civilization has not come to us through books. It is the result of the material conquest of the world by man's brain. His brain grew with his mastery of the tool.¹ The old humanistic idea, culture through books, has to be materially modified to meet the newer conceptions of psychic growth. The child needs *vital studies* first, those that give typical experience. To understand his own wild desire to learn real things as against the artificial substitutes of the schoolroom, one should read over and over Whittier's wonderful study of boy-life, "The Barefoot Boy." Books give second-hand, vicarious experience. Reading, writing, and arithmetic are mere incidentals. They are also tools, like hammer and saw, like clay and wood, to be used for self-expression, for experiment and production, and as such worthy of care-

¹ Cf. Doctor Paul Carus, "The Philosophy of the Tool," Chicago, The Open Court Publishing Company.

ful handling and development. But they represent the second, not the first stage of learning. There are many otherwise well-endowed and intelligent children to whom these "symbols of reality" will forever remain stumbling-blocks, just as there are others who will never be able to hit a nail straight on the head, or model a human form, or sing a melody without grating on your nerves, but who will play with words and write beautiful poetry, or soar to the heights of mathematical abstraction.

Here we have the different types of mind which have been so fully treated before that no further explanation need to be given here.

But a realization of these facts must lead to a breaking up of our ordinary school courses, so that each individual or group of similarly minded individuals will receive differentiated attention, in fairness to all. There will then be no hard-and-fast grades and grade standards, but groups and group aims, with elastic courses allowing of quick adjustment and of an easy transition from one to another whenever new developments should appear in an individual. All this will finally lead to a recognition of different types of efficiency, of different vocational and occupational aptitudes and inclinations, so that there may be vocational discrimination, guidance, and training, each at the right time in a child's career.

The special bent need not one-sidedly twist a child's education. It should furnish the point of vantage from which the entire field of learning may be entered, thus counterbalancing narrowing tendencies. But unless the child's main interest is taken as the starting-point, he will become hopelessly averse to study and all-around culture.

An Experiment and Its Lesson.—It has often been pointed out that the traditional school courses in which the three R's play the principal parts have been fashioned for the purpose of preparing the pupils not for life so much as for the next higher educational step, the high school. This principle of considering the lower school essentially preparatory for the next higher is adhered to throughout the entire scholastic career of the child, from the primary school to the university. The fact that each step should be adjusted to the needs of the student at that stage of his development, irrespective of what may come after, is almost entirely lost sight of.

To prove that the three R's are not even necessary in the preparation for high school—that the entire theory of “essentials” is wrong—and that we may consider the children's natural tendencies without risking eventually their “higher” education, Professor J. L. Meriam, of the University of Missouri, has for some years conducted an elementary school in the work of which “emphasis is given to the immediate needs of the pupils rather than to preparation for high school work.” The following statements are quoted from Doctor Meriam's report in the *Journal of Educational Psychology* of June, 1915:

The pupils throughout the seven grades pursue four “studies”:

1. Observation of nature and industrial activities.
2. Playing games of present interest.
3. Handwork: making things of immediate usefulness.
4. Enjoyment of stories, pictures, music.

Reading, writing, arithmetic, and other such “common branches” are not taught as such at all. The content of such branches is *used* only as needed in one or more of the four studies constituting the curriculum of this school.

This does not mean that pupils in this school do not learn to “read, write, and cipher.” It does mean, however, that pro-

iciency in these common school studies is made quite subordinate, as a purpose, to proficiency in "Observation," "Play," "Handwork," and "Enjoyment of Stories." Thus it might be rightly claimed that the work of this school should be measured, not in terms of school subjects, but in terms of the out-of-school activities of the pupils. But one of the cardinal principles of this school is: Preparation for later efficiency is acquired by being efficient in present activities. . . . Thus, while preparation for high school work has been treated in this school as quite subordinate to another purpose, the assumption has been made that pupils trained in this school would prove equal to doing at least average work in the high school.

The University Elementary School has been dealing with small classes, as might have been expected. After ten years of activity the total enrolment had reached 347. Seventy-five have been graduated, but not all of these had all their work in this school. Sixty-six of those who graduated have done work in nine different secondary schools. An investigation into the standing of these students from a school where no formal work in the common branches is given, as compared with the other high school students, readily indicated that they ranked well right through the classes. Professor Meriam concludes:

This is not a local problem. The formal subjects in the elementary schools are adversely criticised and are undergoing a change. Yet parents and teachers are loath to give up the drill in the three R's on the ground that those subjects are pre-requisite for successful high school work. But the majority of elementary school pupils are destined not to enter the high school. These pupils should be taught the things that are of value to them, viz., the practical things of every-day life. If it can be shown that such studies prepare those who do go further in school as well as the study of the "common branches," a

change in the curriculum of our elementary schools would be advisable. The investigation referred to above supports this theory.

It is not uncommon that young people who have not had the advantage and opportunity of an early school training, will secure admission to high schools and even colleges, sometimes perhaps informally, but with the chance of improving their belated opportunity. They, who have had only "practical" training and experience in their childhood days, usually compare very favorably with their "learned" fellow pupils whose mastery of the three R's did not necessarily give them common sense.

It may also be useful to refer here to a most interesting discovery made some years ago in Springfield, Mass. Examination papers, written by pupils of the public schools forty years or so before, were found which gave striking evidence of the "proficiency" of these pupils when almost the entire school work consisted of a concentration upon the three R's. The papers did not show the superiority which some might have expected at all, but were rather mediocre in comparison with the work done in the modern schools of "frills and fancies." This mediocre work, however, did not prevent these pupils of a generation ago from succeeding in life. One of the poorest arithmetic papers, *f. i.*, was written by a boy who later became a successful banker. The formal work in the "common branches," therefore, does not seem to have the value which has been attributed to it.

Doctor Meriam's successful experiment shows that the author's contention in regard to differentiation of courses to meet individual needs has a basis in fact. By starting with the immediate interests and needs of the pupils, we may differentiate considerably without preju-

dicing scholastic progress when that is expected. And in case of changing interests and the springing up of unexpected variations, a new adaptation is perfectly possible.

Another Experiment: The Play School.—Another interesting and instructive experiment was made in the summer of 1913 in the University of California, under the direction of C. W. Hetherington, by the institution of the "Play School."¹

Hetherington defines this experimental school as "an outdoor school and play centre combined, where the teacher's interest is centred in the children and their activities, not merely in subjects of study; where the educational efforts, including the moral and social, are put on a basis of practical living experience radiating into the whole environment; and where children are considered both as free agents and as immature social creatures requiring aid, social control, and discipline. Instead of teaching subjects, it organizes activities out of which subjects develop, as they have in racial history. The activities organized are the natural, more or less distinct phases of the child's complete life. The usual school subjects develop as phases of these activities."

In the following is given a classification of activities as organized in Hetherington's Play School:

I. *Big Muscle Activities* (Locomotion and Manipulation), including:

- (1) Spontaneous and General Locomotion; (2) Locomotion with Toy Machines, Animals, etc.; (3) Spontaneous or Playful Gymnastics; (4) Games; (5) Dancing; (6) Aquatics.

¹ "The Demonstration Play School of 1913," University of California Press, Berkeley.

II. *Rhythmic and Musical Activities*, including:

- (1) Rhythmic Movements, Dancing and Singing Games, "Eurhythmics"; (2) Tone Plays; (3) Singing; (4) Instrumental Activities.

III. *Manual Activities*.

- (1) General Manipulation with Miscellaneous Objects, Toys, and Educational Materials; (2) Construction (all Materials—Tools); (3) Drawing; (4) Manual Dramatization (Sand and Floor Plays and Construction).

IV. *Environmental and Nature Activities*, including:

- A. *Excursions* with Outing B. *Experimentation*.
Arts, Adventure and
Observational Games.

- (1) Observation on Physical
Nature.....and Physical Nature
Experiments.

- (2) Observation on Plant Na-
ture.....and Plant (Garden)
Experiments.

- (3) Observation on Animal Na-
ture.....and Animal Experi-
ments.

- (4) Observation on Social En-
vironment, with Geograph-
ical and Historical Rela-
tionships.....(See Games and Social
Activities).

V. *Linguistic Activities*, including:

- (1) Spontaneous Vocalization and Expression.
- (2) Free Conversation and Discussion in all Activities.
- (3) Organized Intercommunication, *i. e.*:
 - (a) Discussion, Oral Expression, Story-Telling, Debate.
 - (b) Story-Hearing, Revealing Larger Relationships.
 - (c) Reading to supplement Observations, to interpret and communicate.

- (d) Written Expression, Communication:
Composition, Spelling, Penmanship,
Narrative, Story-Writing.
- (4) Mechanics of Reading and Writing. Games, etc.
Preliminary 3c, 3d.
- (5) Mechanics of Number, Games, etc. Economic
Dramatization.
- (6) Foreign Language. By Play and Conversation.
- VI. *Dramatization* (associated with other activities).
 - (1) Imitative Dramatization; (2) Manual Dramatiza-
tion; (3) Adaptation and Constructive Dra-
matization; Plays; Pageants.
- VII. *Economic Activities*, including:
 - Production and Service of Economic Value. Accounts.
(Economic Dramatization, see Numbers.)
- VIII. *Social Activities*, including:
 - (1) General Contacts involved in the Social Aggrega-
tion of the School and in the Several Activities.
Friendships.
 - (2) The Social Hour:
 - (a) Music, general and by groups.
 - (b) Dancing.
 - (c) Story Hearing and Telling.
 - (d) Dramatics by Groups.
 - (e) Exhibits.
 - (3) Social Functions, Celebrations, Pageants.
 - (4) Group Club Activities.
 - (5) Civic Service.

The author had an opportunity of observing, during his visit to the University of California in 1913, the splendid success of this experimental work. It was altogether unique and bold, and illustrated forcibly how the education of children may be approached quite properly from very different angles.

A Contrast.—Let us compare with the natural swing of work of this kind the formal exercises of our ordinary

schools. The following few samples are taken at random from the State Examinations for the pupils in the highest elementary grade of an Eastern State:

Geography.—Although England is comparatively small in area, she is a great world power. Give three reasons to account for this.

Explain why free labor produced more farm products in the South than slave labor.

Physiology.—What effect does alcohol have on the heart? On a man's character?

Tell in a few words your opinion of patent medicines and their use. What does each contain that is harmful to the body?

History.—(a) What is the purpose of a tariff? (b) State the attitude of each of the two great parties at the present time toward a tariff.

(a) From what sources is the revenue derived to maintain the government of the United States? (b) Name five purposes for which it is expended.

Compare the United States in 1800 with that of 1900 as to (a) population, (b) wealth, (c) area, (d) industries, (e) transportation facilities.

English.—Analyze the following sentence: "We sleep but the loom of life never stops; and the pattern which was weaving when the sun went down is weaving when it comes up to-morrow."

Write the following and underscore the illustrative words:

- (a) A simple sentence with a compound subject.
- (b) A sentence with a phrase used as a subject.
- (c) A sentence with a noun clause as the object.
- (d) A sentence with an adverbial clause.
- (e) A sentence with a verb in the passive voice.

Arithmetic.—A family that rented a house for \$55 a month concluded that it was less expensive to buy a house for \$6,500. They paid annually \$63.50 on account of taxes, \$12 for water rent, \$15 for insurance, and \$75 for repairs. Before buying the house they received an income of 6 per cent on their money. How much money did they save or lose by buying the house?

These questions are typical. No doubt a number of children were perfectly ready to answer them correctly. Of course the rating was on a percentage basis. But the problem is this:

Do questions of this kind in any way appeal to the natural interests and experiences of fourteen-year-old children?

Can children of that age have mature judgment enough to treat these subjects rationally and independently?

Will they carry into their lives after leaving school any appreciable benefit from handling these subjects?

Will work of this kind not give children the illusion that they are capable of handling big economic, historical, and political problems with a minimum of wisdom, information, and scientific accuracy?

If they can answer those questions at all, is it not because of the mechanical memory work and book-lore to which they have been subjected throughout their school career?

By being forced to devote so much time and energy to unprofitable, superficial, and ill-adjusted work, have they not lost time, opportunity, and energy for the real work they ought to have done during this important formative period of their lives?

Will they not leave school under these circumstances, ill prepared for what is before them, and with an unfortunate mental twist which will prevent them from discriminating between essentials and unessentials?

Is it not perfectly clear that consequently many of these graduates, not to speak of those who do not graduate but leave school earlier or on account of non-gradu-

ation, will be unable to adjust themselves to the problems of life and become failures?

As a matter of fact, even where manual training and other life branches have been introduced, hardly anywhere is proficiency in them credited to the pupils to offset weaknesses in the "common branches." This is the case even in high schools of the ordinary kind, where graduation is rarely affected by talent in art or constructive work. Only in those secondary schools which bear a technical or "vocational" character is such consideration given.

In some progressive school systems an innovation has been introduced which promises much for the future. There *home-work credits* are given, that is to say, the home activities of the pupils, their assistance in household duties, in helping in the garden, on the farm, in the performance of chores of all kinds, are valued in terms of conduct, application, and proficiency, and the marks thus obtained are included in the school record.¹ This revives the opportunities of earlier times, when children had a wealth of educational opportunity through the performance of these home duties.

Two decades ago the author tried out, in the Ethical Culture School of New York City, the plan of issuing *two different kinds of certificates* to those who left at the close of the eight years' course. Those pupils who showed themselves capable of higher education, so-called, with whom, therefore, the completion of the elementary course was a stepping-stone to further work, a diploma was given stating this fact. To the others, who had completed the course without showing scholastic tendencies, even perhaps having failed in some of the "com-

¹ Cf. *The School Bulletin*, Syracuse, N. Y., November, 1915, p. 63 ff.

mon branches," but who had given evidence of mental maturity entitling them to graduation, a certificate was issued giving them full credit for their faithful and successful work, without branding them as scholastic failures. They usually made good in their various callings. Either of the two certificates was accompanied by an elaborate statement of the details of the pupil's efficiency and personal endowments.

The Problem of Methods.—Many are the mistakes in school methods, in the methods of presenting the various subjects of instruction. There is lack of depth and co-ordination, and often a most astounding lack of appreciation of fundamental facts on the part of the teachers. Even at this time, when so much attention has been given in normal schools to psychological principles in method, the most flagrant errors and abuses are rampant. This is evident in the most elementary beginnings of school work which is unfortunately left to be done by the least experienced novices in the profession who work for the minimum salary. Take, for instance, the teaching of the multiplication table. It is rarely appreciated that the sign \times does *not* read "*times*," but stands for the operation of multiplying. It signifies "multiplied by." To illustrate: When we have $6 + 2$, it means that 6 is the number to which "something is done"—another number, 2, is added to it. When we have $6 - 2$, it again means that 6 is the number operated upon; something is taken away from it. When 6 is divided by 2 ($6 : 2$), the operation is that we want to find either the result of a division of the quantity into two equal parts, or the number of times 2 is contained in 6. But, again, 6 is the fundamental number. Thus, when we have 6×2 , it implies that we wish to take 6 two times, *not*

2 six times. But if we should read the example six times 2, it would reverse the meaning of the operation. It should be read either 6 multiplied by 2, or 2 times 6. Unless this fact is borne carefully in mind, the young pupils will from the very start be confused in their mental conceptions and operations. But how many teachers do appreciate this fact? And this is but one of the multitude of fatal errors made in the primary grades.

Professor Shiels, of the Catholic University in Washington, D. C., has written a book on "The Making and Unmaking of the Dullard." And over fifty years ago R. B. Carter, an Englishman, wrote a brief essay on "The Artificial Production of Stupidity in Schools." Said he:

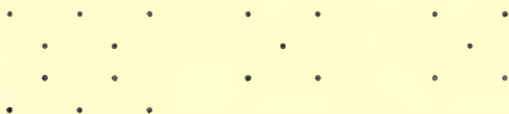
An urchin may be able to say correctly that a word pointed out to him is an adverb or a pronoun, may proceed to give a definition of either, and examples of instances of occurrence, and may produce the impression that he understands all this, when the truth is that he has only learned to make certain noises in a particular order and is unable to say anything intelligible about the matter in language of his own. Or he may repeat the multiplication table, and even work it, saying that $7 \times 8 = 56$, without knowing what 56 is, or what 7×8 means. He knows all about 7 or 8, not from schooling, but from the lessons of life, from having had 7 nuts or 8 marbles; but of 56, which is beyond his experience, he knows nothing. The nature of the mental operations of these children is perhaps as little known to the teacher . . . as the mental operations of the inhabitants of Saturn. The adults distinctly understand a thing which they feel to be very easy, and do not know that any children can talk about it correctly without attaching an idea to their words.

To how many of us *does* 56 mean anything concrete? Let us be modest and ask, To how many of us does as

small a number as 20 mean anything concrete? How many of us will recognize this small number accurately and promptly in the following irregular mass of dots?



As soon as we arrange this number of dots in some conventional form, we add them up easily:



Examples of this kind can be multiplied. It is in part the great mass of methodical errors which vitiates the didactic process and causes pupils to become muddled in their mental operations, to live on words and symbols without ever touching reality, to fail in their school tasks, and finally to be launched from school into a world of actualities of which they have no understanding, and in the battle with whose stern demands they are defeated.

Just because the beginnings of rational didactic work are the most important and fundamental, the first step in school work is to be most carefully considered. The author has devoted the next chapter to a consideration of methods adapted to the youngest children. Chapter

XXII is a discussion of the kindergarten period in laying the foundation of sane mentality by recognizing individual differences. A discussion of the Montessori method is inserted. This insertion has been made because so many educators and lay people have hailed this new movement as the one great liberator of the child from the fetters of irrational school training. It is well, therefore, that in a discussion of the problem of school adjustment to the individual child, for the purpose of forestalling his failure in life, some attention should be given to the claim.

CHAPTER XXII

THE KINDERGARTEN PERIOD

A New Gospel of Freedom.—When the kindergarten was first introduced in this country, it was justly hailed with enthusiasm as a new gospel of freedom from scholastic narrowness and pedantry. It gave a new outlook upon the possibilities of child development. It took advantage of those valuable formative years which had been neglected by the traditional school where education was held to be synonymous with book-learning. It led the educator back to some realities in child life. And it recognized the symbolic stage in the development of the child mind.

It has, however, not altogether justified, in its practical development, the expectations of its advocates. Its symbolism has run wild; its system has degenerated in many places into a rigid formalism; the externals have pushed the underlying principles into the background, and the kindergarten has suffered from the same difficulty which has been the curse of primary education throughout the land, namely, that the youngest tyros in education were considered good enough to teach the youngest children, those precious, delicate minds and souls to whom the wonderland of the world is just unfolding itself.

Genetic Psychology vs. Stereotyped Forms.—It is not the purpose of this book to enter into a discussion of these criticisms. But *two great mistakes* which have been

made must be discussed here: The one is that in the general kindergarten practice the original Fröbel Gifts and Occupations, Games and Songs have been adhered to without modification, in a *stereotyped form*, and with the exclusion of everything that might have enriched and broadened the life of the kindergarten children. Thus, there was a relative paucity and one-sidedness of educational material which left many a child of that age unprovided for and unappealed to. For the newer appreciation of genetic psychology has taught us that the child is a much more complex being than was known at the time of Fröbel, and that the laws of the development of the individual cannot be understood without a knowledge of race psychology and biology.

Uniform Standards.—Again, the rigidity of general practice makes itself felt in the tendency toward uniformity. Group work is the rule; individual work the exception. All children in the same group are supposed to do the same thing practically in the same way at the same time. Individual differences in execution which, of course, cannot be avoided, are as far as possible discouraged so that a uniform standard of perfection may be attained.

The children march and sing at the same time, they dance and play in a prescribed and imitative fashion when the programme requires it; they weave and model and draw and lay sticks and build at the same time, in a formal way and following conventional, traditional patterns.

Penalty of Success.—It has been, in a measure, a misfortune for the kindergarten that it has succeeded so well in this country. In its own native home it has never been fully recognized in the public school system;

and private initiative, adapting itself to local and special needs, kept the kindergarten idea freer from formalism than it was possible here. As soon as the kindergarten became a feature of public school education, in the American system, it partook of the faults characteristic of that system. It ceased to be a *kindergarten* and became a classroom arrangement. It imprisoned the children indoors and became a matter of chairs and tables, and order and discipline, and quiet and co-ordination. However, the young child is repeating, in his life instincts, his games, his experiments with the world about him, the experience of early race history. He wants to play on the floor, not to sit orderly, for any length of time, on a chair; he wants to play in a sand-heap, not on a sand-table; he wants to be dirty, not neat; he wants to play with water, and wade, and throw, and climb, and drop things, and play hide-and-seek, and use a stick, and do all sorts of primitive things. The child who easily conforms to the routine of an orderly kindergarten is either abnormal or subdued.

The Young Child Is Individualistic.—Again, the young child is not naturally a social being. He is individualistic, just as his remote ancestors were who saw a competitor in every other individual. True, this independence and asocial condition must be converted into a realization of the social conscience. But this is a growth which cannot be forced, or else it will be an artificial thing, and the child so constricted will harbor an everlasting resentment against a social order which curtails his freedom. No wonder that we have so little community spirit among our grown-up population. The time comes naturally when the child, seeking companionship for the projection of his own personality into other

lives, and enlarging his own personality by making others a part of his own emotional and mental being, will socialize himself. Then the rights and privileges of community life, as well as the duties and functions involved in it, will enter into his consciousness.

Montessori Influence.—It is here that the so-called Montessori methods have hit the kindergarten hard. These methods and suggestions are by no means original, having been used for a long time in a progressive reconstruction of school and kindergarten systems. They have characterized the work for the difficult and abnormal child in particular, and had been formulated long before we had heard of Montessori. It is, however, interesting to note how the American public, as soon as a foreign voice was raised in iconoclastic enthusiasm, immediately clamored for the recognition of principles which it had so long considered with distrust. Now, all of a sudden, teachers discover that it is really possible to have a group of children under individual freedom much greater than it had been thought feasible. In the light of these principles the teacher is first of all an *observer*. She studies the situation and acts accordingly; she does not approach the child with a preconceived idea of system. She realizes that obedience is a sacrifice of self on the part of the child; a sacrifice that will be made more readily when the child—not knows, for that is impossible at that stage—but *feels* the necessity for it, through the confidence which his educational leader and his comrades inspire in him. This is certainly the manner in which a normally vigorous child is educated in the home. Force and punishment, fear, and even an artificially stimulated desire to please, will never develop a child's best, innermost faculties. He may be-

come a conformer, a pattern, a hypocrite, a coward, a prig, an "average" child, but never a character.

Racial Differences.—The Montessori movement suggests another thought. It represents an effort at educational reform largely adapted to the children of Italy. Some of the singular omissions observable in the system, some of its surprising features, yes, even the very extremes to which it goes in the matter of freedom, must have their cause and origin in the conditions under which it was developed. These local conditions are racial and historical. For this very reason it cannot be merely copied in America. These conditions have been discussed elsewhere in this book; suffice it to say that here is a field of fruitful study and discovery. But what we may learn from these facts is this: that in applying any educational system or method we must consider racial differences. There is a difference in racial atmosphere and attitude, life habits and emotional response, even in cultural development. What appeals to one race will not appeal to another. In our country, with its mixture of raw material cast upon our shores from different countries, it is absurd to think that kindergarten practice can be the same in the Italian sections as in the ghettos, in the Polish districts as in those inhabited by families of German or American lineage. And where, in any individual kindergarten, there is a conglomeration of racial types, the work will have to be carefully differentiated to meet the needs of native instincts and ideals. And even within the racial groups there are different civilization levels (*cf.* Chapter III). For the children of these various elements the kindergarten period of development means many different things.

Individual Types of Mind.—It is almost superfluous to add that further adjustments of the daily routine must be made to suit the needs of individual types of mind. Do not say that the young child does not present such a variety of problems. Quite the contrary: It is essential to make distinctions at the early age, so as to start the child right on his career. It must be admitted that the finer individual differences, such as represent an accumulation of family traits, imitations of environmental conditions, and special endowments and preferences, manifest themselves fully only at the period of adolescence. Yet even in the baby difference of type is clearly recognizable.

Differences in Growth-Rate.—There is, first, the difference in physical and mental growth-rate. Not all children of 3 or 4 can even wear garments of the regulation size, or react upon stimuli in a uniform manner. Their sense-perceptions and reactions will show wide differences; their motor co-ordination, their balance, their imitative and constructive ability will vary within wide limits. Their endurance, their concentration, their ability to learn from errors will show a multitude of differences. They will progress with a very great diversity of speed. Some will still need the large gifts and to work in their occupations on a large scale, when others will have proceeded to be able to cope with rather minute adjustments. Some will still be satisfied with the symbol when others will want realities. Age is a very relative thing.

Mental Attitudes and Aptitudes.—Further, there are distinct differences in mental attitude and aptitude. Some children are born individualists, born leaders; others are naturally conformists and want to be led.

There is the child who is afraid of nothing; and the other who shrinks from publicity and competition. There is the one who is always original and inventive, and who hates to merely imitate; others have no spark of originality and depend absolutely upon models and patterns. Should we not consider these differences among many others? Surely it cannot be said that it is one of the first duties of the kindergartner to curb the forward child, to check the impulse of leadership, to mould the heretic thought and non-conformist method into the form of conventionality. The history of the race is so full of bloody struggles against orthodoxy of all kinds that we should guard against the stifling of souls in the beginning of their growth. Not oppression, but wise guidance on the basis of a real understanding and appreciation of underlying motives and conditions is what is needed. It is only too often the bright child, the child of initiative, that is made the victim of the levelling efforts even at this early period, so that his career is hazarded from the first. So few of us have the faculty or the patience to enter into the intentions of little children. Their actions are often gravely misunderstood, their motives unappreciated, their minds and morals undervalued, their emotions misrepresented. A gulf will then open between the teacher, or parent, and this budding soul, a gulf difficult of bridging; and the young heart will shut itself in and the young mind will be warped.

Conventional Symbolism.—To illustrate, reference may be made to a very common practice. The kindergarten teacher will draw houses, tables, cats, and other things on the blackboard, or show these forms in the way of stick-laying; or develop sequences with the build-

ing gifts, illustrating steps, bridges, and other structures; or punch holes in sewing cards for the sewing out of conventional and life forms, etc.; and the children are expected to imitate these things in the regulation way. This presupposes that they see the things represented in the same symbolical form the teacher sees them, and which is intended to contain all the essential features of the objects thus delineated. But a study of the spontaneous drawings and structures of children shows that this is a mistake. Children do not see things in the regulation way. To them features seem essential that are quite different from those the teacher thinks should be shown in the reproduction.

The blackboard forms of houses, cats, etc., are nothing but pictographs, picture-writings, hieroglyphics, as it were, symbols of the real things, and the child uses them as such. In the ordinary practice, whenever he is asked to draw, or lay with sticks, or build with blocks, or what-not, a certain object first presented in the form described, he will always reproduce the *original symbol* without any freedom of deviation, or any attempt to express what is really in his mind. Thus, a conventional method is introduced which counteracts the natural instinct of the child to represent things in his own way. The ordinary exercises perpetuate this conventionalization. Individual attitudes and visions are entirely lost sight of, and much opportunity is lost of studying and understanding what is really in the child's mind, or where his aptitude lies.

Imitation is said to be one of the fundamental instincts of the child at early stages. True enough; but imitation rightly understood. As said before, there are children who can do little more than imitate; but they

must not set the pace for all. As soon as the teacher leads the child into stereotyped form, she is on the wrong track. She must always first appeal to the child's own method, and merely assist him in *expressing himself*. In this connection the author is, as he often is, reminded of the paradoxical saying of the late Doctor Harris: "Of course, the teacher must be an example; but she must take care that no one follows it." In other words, while she should be an inspiration to the child to find the right path, she must never be a pattern after which he moulds his own individuality.

Illustrative Cases.—It may be of interest to quote here the contrasting types of two boys from a report of a kindergartner at "Herbart Hall" (Cases 74 and 75). *A* is older than *M*, and an entirely different type of mind, although both were very backward when they came and really beyond kindergarten age, so-called.

A showed in his Gift work a preference for small material, dull colors (always chose the brown tablets instead of the red, blue, and yellow), and accurate details in construction. His natural diffidence called for an encouraging method. I used at first the free play, then combined it with imitation and suggestion. Toward the end of the year he had acquired confidence in his own powers, and, in response to any given suggestion, would bravely choose his own material to carry out an idea.

In many cases the suggestions came from his little school-fellow, *M*. This child has a powerful imagination and at the same time a marked tendency to utilize the things he can get hold of. Once, while building with the Sixth Gift (large size) he found that his train was so tall that it could not pass under a four-block high bridge. He then brought two loads of boxes (8) from the cupboard and made a fine bridge. When *A* saw what *M* did, he took the cover of a cardboard box and improved his house.

As a rule *A* would spend the full Gift period in making and perfecting one construction, while *M* would build ten different things, in a careless, rapid way. *A*'s perseverance in his work is quite remarkable. One day he tried to build a castle with the tablets of the Seventh Gift. As the task seemed too hard, he tried to make a tunnel. When told that the tablets were not intended for that purpose he begged to be allowed to try. And although he spent thirty minutes in trying (the tunnel came down twelve times) he finally succeeded in showing me a smooth, carefully finished tunnel about ten inches long.

Examples might be multiplied.

The Kindergarten Principle.—The author wishes to have it understood that he believes in the possibilities of a real kindergarten. All the Gifts and Occupations, all the Games and Songs, and all the traditions have their legitimate place. But the kindergarten is more than all that. It is a *principle*, and around that principle we may assemble a multitude of means and methods among which we may discriminate for the sake of reaching the individual child.

The Montessori Cult.—Inasmuch as a surprising number of lay people, parents, and even teachers in this country have hailed the Dottorressa Montessori as the new savior of the child, and her doctrines as a veritable gospel of child conservation, it seems necessary to say here at least a few words in regard to the "new method."

Of course, it is not a new method at all. It contains no new principles or inventions. Fröbel was a forerunner of modern psychology, the creator of a new thought (no matter how imperfect some of his methods were), a seer, and his work will have to be recognized as having broken new paths even after his Gifts and Occupations are long forgotten. Montessori is mainly a compiler and digester.

The Principle of Freedom.—Both Fröbel and Montessori appeal to the same period in child life, the age of 3 to 6. Fröbel gave many of his suggestions for use in home education, and his "Mutter- und Koselieder" ("Mother-Play Songs") will be immortal. Montessori seems to lay less stress on the home element, perhaps under the influence of Italian conditions. But just in this period of a child's life, the principle of freedom is of the greatest importance. It has been claimed that this freedom has found its first thorough realization in the "case dei bambini." Montessori rejects stationary desks and chairs and says:

The lesson must be presented in such a manner that the personality of the teacher shall disappear. She must be warned of two things: First, not to *insist* by repeating the lesson; and second, *not to make the child feel that he has made a mistake.*

These demands are psychologically valuable, but cannot be enforced too rigorously. Besides, the freedom which she demands is rather illusory, as she has very fixed rules and restrictions, and says:

The liberty of the child should have as its *limit* the collective interest; as its *form*, what we universally consider good breeding. We must, therefore, check in the child whatever offends or annoys others, or whatever tends toward rough or ill-bred acts. But all the rest—every manifestation having a useful scope—whatever it be, and under whatever form it expresses itself, must not only be permitted, but must be *observed* by the teacher. Here lies the essential point: from her scientific preparation the teacher must bring not only the capacity but the desire to observe natural phenomena. In our system she must become a passive, much more than an active influence, and her passivity shall be composed of anxious scientific curiosity,

and of absolute *respect* for the phenomenon which she wishes to observe. The teacher must understand and *feel* her position of *observer*; the activity must lie in the phenomenon.

Little objection, if any, can be made against this conception. It has been preached by progressive educators for many years past. Fröbel knew no stationary desks or chairs; and movable seats and tables have been introduced in many leading schools long ago. German pedagogy has always recognized the child as the real centre of instruction, and has taught the gospel of "education in freedom." Pestalozzi, a century before, preached the same sermon over and over again.

Wise Teachers Required.—Education in freedom and for freedom is, however, a very difficult task, and requires well-trained, experienced, and wise teachers. The want of these has wrecked many a kindergarten; it will be the danger-point for the "Montessori school."

Objectivity of Instruction.—It is hardly necessary to emphasize that Montessori's suggestions on behalf of *objectivity of instruction* and of proper *sense training* are restatements of old pedagogical teachings and offer little that is new, unless it were the introduction of such terms as "thermic," "baric," and "stereognostic" senses. This does not mean that we may not feel indebted to her for several skilfully planned pieces of didactic apparatus. Some of them are taken from the methods of teaching the feeble-minded from which the Dottoressa originally started, and which have been in use for many years. One of these is the form board, first developed by Seguin when he was superintendent of the institution in Waverley, Mass., together with other similar material suggested and used by him. Her advice to use with normal children methods which

were originally intended for the instruction of the mentally deficient, valuable as it is, is again nothing new. In fact, there is no fundamental difference between methods used for the feeble-minded and those employed in regular schools. The principles are the same, only that in teaching the retarded or even the defective child we must lay special stress upon the first steps and proceed much more slowly and cautiously. To leave out these first and fundamental steps in the education of the so-called normal child, is indeed a great mistake, which has its cause in a misappreciation of the developmental stages of the child's mind. In fact, this misappreciation and the consequent neglect of the first steps are the chief causes of many derailments and "exceptional" developments.

Montessori lays much stress upon systematic *sense training*. She has definite exercises, also, for the temperature-sense, the muscle-sense, and the perception of weight, etc., which have been much neglected by teachers. The child's diet and physical training are also given much attention. To her the generally accepted idea of gymnastics seems inadequate. She recommends exercises in walking and running, breathing, talking and articulation, dressing and undressing, buttoning and lacing, in carrying and handling things like cubes, balls, etc. She emphasizes walking and running, as there are very specific morphological changes going on in the body of children of that age which are stimulated by these exercises. But she eliminates rhythm from marching and insists mainly upon correct posture and gait. Group work does not appeal to her; she wants to individualize almost exclusively. This is in contrast to her demand that the child must be prepared for the forms

of social life. By way of games and occupations she recommends Fröbel's geometric gifts, balls, hoops, kites, bean-bags, also running games like puss-in-the-corner, catching, etc.—most of which can certainly not be played without group work.

Facts vs. Imagination.—All this contains much that is good and useful. But her system has a fatal defect in principle which places it in sharp contrast to Fröbel's. She wishes nothing taught but *facts*. Children must learn the "truth" and nothing but the truth. In other words, she confines the work to cold, dry observations, and in the explanation and expression of these she demands the fewest words, the briefest sentences possible. Her motto is: nothing superfluous. Imagination, the play of fancy, anything symbolic—she wishes to be put under ban in the education of these little ones. She rejects the dramatic games of the kindergarten, like those of the carpenter and the shoemaker, and replaces them by real sawing and hammering. The fanciful stories of the kindergarten are condemned as silly.

Culture Epochs.—These extreme views give evidence of her misunderstanding and misinterpretation of a child's early development. This is the more surprising as she seems to have some conception of the culture-epoch theory which has been explained elsewhere in this book (pp. 41 ff.). Says she: "*The child follows the natural way of development of the human race.* In short, such education makes the education of the individual harmonize with that of humanity. Man passes from the natural to the artificial state through agriculture. When he discovered the secret of intensifying the production of the soil, he obtained the reward of civiliza-

tion. The same path must be traversed by the child who is destined to become a civilized man."

In this way she endeavors to justify the gardening occupations of the young child, being engrossed in the material externals and forgetting the conditions of psychic evolution. The beginning of culture in the human race is a period of mythos, of nature-worship, of personification of the natural forces, of fetichism, of symbolism. The young child, likewise, lives in a symbolic world of his own, fairy-tale like, and does symbolic things, plays in a world of fancy out of which the real must evolve as the truly ideal. Even the child of 1 and 2 does many unreal things, "makes believe," feeds his doll or hobby-horse from an empty plate, plays he is somebody else, etc. The entire psychic complexus of primitive man is mirrored in the young child. Fröbel, in his games, has recognized the dramatic instinct of the child and gives ample space to the child's world of fancy. That Montessori fails to do this is a fundamental defect of her system. She goes to the other extreme—while mistaken kindergarten methods, as was shown before, have overemphasized the symbolic element.

Premature Scholastics.—Her "practically" inclined mind also induced her to instruct her pupils as early as possible in scholastic things proper, and to suggest methods which may lead to a rapid mastery of reading, writing, and arithmetic. Modern pedagogy is suspicious toward the early introduction of these arts. One is justified in claiming that it is contrary to the natural development of the youthful mind and cannot be supported by the facts of physiological psychology. The young child must master a wealth of impressions and experiences before he needs to approach formal instruc-

tion. Of course, children vary in their type and in the rate of their bodily and mental growth, and some may be able to bear an early taxing with "learning" more easily than others. And it has often enough been demonstrated that it is quite feasible to teach otherwise perfectly normal children the arts of reading, writing, and figuring at an early age, by the employment of suitable methods and by special emphasis being laid upon this teaching. This has been done in many cases. Some of them have been discussed in Chapter VII. But these early readers frequently grow up to be rather mediocre adults, and it is hardly intelligible what purpose can be accomplished by driving methods which rob the children of most of what is necessary and natural at the early age. It is certainly not educational in the broad sense to do these things so that the children may be early bread-winners. They are apt to lose in the long run.

Methodical Devices.—Montessori's methods in teaching reading, writing, and arithmetic have been used in more or less modified form for years. Her form boards, her number rods (*cf.*, for instance, the "graduated wooden rods" in Shuttleworth and Potts's book on "Mentally Deficient Children," p. 153), her Big Stair, and other devices which have aroused so much admiration, have been employed before, although sometimes on a smaller scale. To have them in large size is commendable and in harmony with the newer kindergarten practice of having large-size gifts.

Her reading method in which she lets children read words and sentences mechanically without understanding their meaning, cannot be seriously defended.

Montessori is a clever practical teacher, of a pleasant and magnetic personality. She has a solid foundation

of physiologic and anthropologic information and is well schooled psychologically and medically. She has read much and has the knack to compile and work out didactical ideas and material which have come down to her. She is essentially constructive and an intelligent organizer. This has given her occasion to do a valuable piece of work which should and will be recognized. Her so-called system is defective because it is one-sided and incomplete. But in conjunction with other progressive methods it can be utilized in formulating proper methods of teaching and training young children. It is for this reason that space has been given it in this book which is devoted to a brief discussion of provisions and methods which may prevent, if possible, educational failures due to faulty methods of early education.

An Ideal Plan for the Kindergarten Period.—A kindergarten should have the wide scope of a well-regulated home in which each child may live his own life and share the life of his fellows. There should be presiding over it a motherly spirit of large sympathies and of fine discriminative power, with large resources as to self-adjustments to ever-changing situations. There must be the atmosphere of freedom and encouragement. There must be readiness of a true interpretation of all manifestations of the budding infantile minds. There must be open-air work, in a garden, in a yard, with sand-piles, flower-beds, climbing-ladders, swings, and puddles. The room of the kindergarten must be a paradise of toys and activities. Add the work-bench and the multitude of really educational toys and occupations which are so abundant nowadays, to the traditional gifts of the kindergarten. Break up the monotony and the routine of the orthodox programme,

and introduce the child into a world of real life. There are numberless songs and games that can be safely adopted into the system. Let the children express their own feelings in free rhythm, in dance and song. Do not tarry too long over the songs of the shoemaker, blacksmith, and carpenter, but take the children to the workshops to see the men at work. Take them on excursions to the country instead of merely singing and talking about the farmer and about sowing and reaping and thrashing. Let them have miniature garden-farms and shops of their own, with real tools and spades and wheelbarrows and work that will give their growing bodies exercise such as mere calisthenics will never provide. There should be more virility in the kindergarten, not merely girlish notions of butterflies and dandelions and chickadees. Do not for a moment forget that even little boys are real boys after all. Then there will soon be a wonderful activity and bustle, and the individual aptitudes will manifest themselves for you to observe and study and make use of. Use—not for the individual child alone, but for the child-community which will profit by this sharing. And the sharing will react in a socializing way upon the individual. Break up the lockstep in the kindergarten and set the example for our elementary and high schools so that they, also, may set the child free and give the different types opportunity to grow unfettered, but discreetly guided.

After all, we can do our best only when we can act in our own way, and be ourselves. Then we shall also appreciate other selves and enter into genuine altruistic relations. A community built up by enfranchised individuals who care neither for convention, nor tradition, nor precedent, nor fashion; whose judgment is not

affected by fear or false ambition; who strive for the best that is in them and feel sure of an appreciation of their motives—will be the strongest on earth. The poet's word is applicable to the kindergarten child as it is to the grown-ups:

“To thine own self be true,
And it must follow, as the night the day,
Thou canst not then be false to any man.”

CHAPTER XXIII

GENERAL PROVISIONS FOR VARIATIONS FROM TYPE AND FOR DEVIATIONS FROM THE NORMAL

In the previous chapters of this part two particular problems have been discussed. The one was how to secure, as far as it is humanly possible, a clean and normal birth to a child so as to prevent conditions which would lead to failure and derailment from hereditary and congenital causes. The other was a consideration of an educational policy in school and home, and of such social and environmental conditions as would grant to normal and potentially normal children opportunities for complete individual development, giving full swing to individual variations *of* type.

In this and the following chapters we shall approach the problem of those children who represent difficulties, physical, mental, or moral. Having discussed previously the "typical" and "pseudoatypical" children (*cf.* classification), we are now dealing first with the truly "atypical" child, and then with those children who belong to the subnormal and abnormal groups. The "atypical" children represent variations *from* type; the others are deviations from the normal.

Much has already been said in the first two parts of this book of the methods required to deal with these children adequately and justly. So these considerations will be more in the nature of a concise statement and summary.

Proper Diagnosis the First Requisite.—It is plain that the first requirement for dealing with genuinely handicapped children is to make a thorough diagnosis of each case.

In order to safeguard all children as far as possible, inasmuch as mere observation in ordinary class work is a slow and inaccurate process, every child entering school should be examined first of all in the *educational clinic* described in the second part of this book. This will give the opportunity of classifying the children as to type, physical and mental endowments or weaknesses, etc. Child history items, statements about home conditions, reports of family physicians, etc., should be kept on record for reference. The *department of medical inspection* should be expected to co-operate promptly with the educational clinic for the purpose of establishing the physical status of the child. This will help to determine a child's powers of endurance and resistance, the keenness or defects of his sense reactions (thus regulating the problems of seating, light, etc., for each pupil), and all those other conditions which enter into a valuation of the child's physiological and biological characteristics and needs.

The *medical clinic* should have departments for *examinations and measurements of anatomical and functional conditions*, for the *testing of vision, hearing*, and other senses; for *ear and throat examinations, dental work*, etc. It should be under the direction of a competent physician with a sufficient staff of trained assistants and nurses. The chief inspector should be in constant touch with the chief of the educational clinic, and the entire department is best under the management and control of the educational authorities.

Objects of Medical Inspection.—The objects of medical inspection may be summed up as follows:

A. Prevention of development of disease or of physical derangement in children.

B. Recognition of existing physical difficulties and of their manifold complications.

C. Removal of ailments, and co-operation in overcoming educational, social, and other handicaps resulting therefrom.

A. Prevention of Development of Disease or of Physical Derangement in Children.

This requires:

1. Regular and thoroughgoing examinations and physical measurements to immediately offset incipient unhealthy development of any description.

2. Guarding the health of the school community by prompt measures when contagious and infectious diseases appear.

3. Enforcing the rules of proper school hygiene, and encouraging the hygienic care of the individual pupil and his home.

4. Instruction given to teachers and school officers to recognize danger-signals promptly.

B. Recognition of Existing Physical Difficulties and of Their Manifold Complications.

Here we must distinguish:

1. The recognition of physical difficulties as such:

Defects in the special senses; diseases of the ear, eye, nose, throat, teeth; disturbances of digestion, circulation, assimilation; skin diseases; tuberculosis; venereal infection; bad sexual habits, and malformations of the sexual organs; neuropathic and psychopathic conditions, etc.

2. The relation of these physical difficulties to the mental life of the child.

3. The relation of these conditions to the moral life of the child.

4. Recognition of the effect these conditions (acute or chronic in character) may have upon the vocational career of the child and upon his usefulness as an independent citizen.

C. *Removal of Ailments, and Co-operation in Overcoming Educational, Social, and Other Handicaps Resulting Therefrom.*

Under this head these points have to be considered:

1. A mere removal of some physical ailment is not a complete remedy, nor is it always a simple or rapid process; educational methods must be employed after the medical relief, or even along with it, to accomplish restoration to normal functioning.
2. Thus, diagnosis and treatment require the co-operation of the educator and the psychologist with the physician, inasmuch as the physiological aspect of a case is intimately bound up with psychological and emotional elements, and with facts of educational and social import.
3. Physical difficulty, combined with mental and moral variation, is the keynote of exceptional development in children; hence, in their cases, medical and educational co-operation is particularly indicated.
4. Just as physical conditions affect the mental and moral states, the latter have their specific influence upon physical developments as such. In other words, emotional elements, volitional control, psychic states, imaginings, etc., react upon the body in general and influence functional reactions. Hence, again, the need of an all-sided co-operation.

If all this is to be accomplished by medical inspection, it must be developed to a high state of efficiency. At present we have makeshift arrangements in most places. In lieu of busy practitioners who are employed on a meagre salary to do some ill-organized inspection work in the schools, we should have a corps of *specially trained and well-paid physicians* with whom this work is a *life-calling*. We need them for the schools at least as much as we need them for hospitals and asylums. If we compare the number of trained men and women employed in the asylums for the insane with the number employed

in the schools, we shall realize the inadequacy of the school provisions.

School nurses and *social visitors* will complete the work by co-operating with the homes of the pupils whenever necessary. An effective following-up system should be devised so that each child may have the full benefit of these provisions.

Repeated Examinations.—Children change, often quite rapidly, in accordance with the laws of growth, which work with each individual in compliance with all the factors which differentiated him from the others, so that there is an endless variety of combinations. In this manner the unfolding of an individual psyche is full of surprises. To catch the budding instincts and capacities, to keep on the track of every new change, it is necessary to repeat the examinations of body and mind at regular intervals.

In this wise we may forestall derailments, or if we cannot turn the course of an undesirable development, we may at least discover its origin and follow it up.

At certain junctures a child should be under closer observation than ordinarily. For school adjustment, for the sake of his moral evolution, or even for his physical development, he will then need greater care and more minute scrutiny. Co-operation with the home will always be indicated. But each school system should organize *observation classes*, perhaps even *observation schools*, for scholastic and disciplinary purposes, without, of course, attaching any penal, stigmatizing, or compromising features to the transfer into classes or schools of this kind. It may be well to have, also, in addition to the observation day school, an *observation*

parental school, where the children can be observed and studied in their habits of life and conduct.

A System of Clinics.—As has been shown in the chapter treating of the meaning of an educational clinic, these clinics, together with the medical clinics, may be considered as feeders for a number of special clinics in which much expert work shall have to be done, to supplement the work of the clinics of the first order. There will have to be *pathological laboratories* at the service of the school clinics, for the making of blood tests, sputum tests, examination of fæces, urine, and cultures of all kinds. There should be *psychological clinics* for the study of cases which require more elaborate and intimate psychological examinations. These psychological clinics will also be helpful through developing accurate methods for determining the *vocational aptitudes* of the youth of our land. Those children who give evidence of psychopathic derangements should have the opportunity of being referred to *psychopathic clinics*. There will be so much need of *dental clinics* that they should be co-ordinated with the regular medical work. But we may further have special arrangements for *orthopedic* work, also in connection with *open-air classes and schools* inasmuch as many of the orthopedic cases have a tubercular character.

Clinics for Delinquents and Dependents.—A similar system of clinics should be operated in connection with every children's or juvenile court, morals court, and detention home. As a matter of fact, detention homes may be utilized as observation clinics. The problem of charity for dependent and destitute or ill-used children, involves likewise the careful study of the individual case. Therefore private charity bureaus no less than municipal

and State charity commissions should provide for educational, medical, psychological, and other clinics in the same organized manner as has been suggested for the schools. The sociological investigations to which these agencies usually confine themselves tell only part of the story. The best plan will be, as has been recommended repeatedly in these pages, to organize all this work jointly under the educational authorities.

Medical Aspect.—In order to exemplify the function and importance of medical relief and co-operation in solving the problem of the exceptional child, the author has invited a number of eminent physicians to contribute to a "medical symposium," each one to treat of this great subject from his own standpoint and experience. He has preferred such expressions from experts to his own statements, for the reason that this method of presentation will make the argument much more powerful and convincing. This brilliant symposium is given in the Appendix.

CHAPTER XXIV

PROVISIONS FOR EXCEPTIONAL CHILDREN IN SCHOOLS AND INSTITUTIONS

Special and Ungraded Classes.—The terms “special” and “ungraded” classes have been used interchangeably. They mark the first attempt to segregate children who do not conform.¹ But they have been grossly misused, largely through lack of differentiation. They have been a sort of dumping-ground for all those children with whom the regular grade teacher does not know what to do.

In some school systems there is a rule that pupils who have been for two years in the same grade must be moved on to the next higher grade, no matter whether they can do the higher grade work or not. Sometimes this method works beneficially as, with the progress of maturing, the mind of a child wakes up to its higher responsibilities. In other schools the opposite method is followed. The author has had under his observation

¹ Germany took the lead in this movement as in so many other educational and cultural movements. Special classes for mentally deficient children were established there in 1867; Norway followed in 1874, and England, Switzerland, and Austria in 1892. In the United States, Providence, R. I., opened three schools for backward children in 1893; Boston organized its first special class in 1899. In 1901 the first special class was established in the public schools of Philadelphia. Other cities followed. In 1911, 220 American cities had special classes for backward children, although many of them followed the bad example of England in allowing low types of defective children to enter.

children who had been left in the same grade for as long a time as five years. These had been forced to do the same grind over and over again until they became sick of it, or went to sleep mentally, and consequently became either obstreperous, or absolutely unresponsive to anything—fit only for the human refuse-heap. They are saved only if their native power is strong enough to assert itself in time, unschooled as it will be under the circumstances, and will defy their pedantic upbringing, what there was of it.

Ungraded Classes.—For pupils of this type the “ungraded” class can sometimes do much good, provided it does not stigmatize them as defectives and does not in that manner deprive them of the incentive of self-esteem.

Many of the children now retained in “ungraded” classes are in reality mental defectives and ought to be in custodial institutions. Many other “ungraded” pupils would do better in “parental” institutions where they would live away from their homes.

Rightly understood, an *ungraded* class is one in which the ordinary grade requirements are suspended. It is best adapted to those children whom the author has called pseudoatypical. This class comprises those whose progress in school was hindered by irregularity of attendance, or change of schools; by a slower rate of development without pathological retardation; by a more or less uneven development, with more rapid progress in some and temporary retardation in other subjects; by temporary illness, or by slight physical difficulties, such as lameness and minor deformities; slightly impaired vision or hearing; adenoids, etc. The “ungraded” class will also be of great help to children who have

suffered from neglect; for the children of our immigrants with whom there are difficulties of language adjustment, although they are mentally and instructionally advanced, or with whom a racially differentiated instruction is needed for a while.

It should be the function of the "ungraded" class to restore its pupils as soon as feasible to ordinary school conditions.

Many pupils, for that matter, would make better progress even in their regular classes if their teachers would recognize their exceptional condition and would adjust the work in a measure to their type and rate of speed. This, of course, would require *much smaller classes* than is now the rule. But this demand is so self-evident for the handling of children in general that it hardly needs to be stated. Public schools compare very unfavorably with private schools in regard to the number of pupils to a class and a teacher.

Ungraded classes and elastic courses of study require a type of teacher much better trained and much more professionally dependable than is the average teacher of to-day.

Special Classes.—The "special" class should be differentiated from the "ungraded" class. It may share with the latter the distinction of offering opportunities for individual *observation*. As has been stated before, it may be desirable in some of the larger school systems to have observation classes established to try out pupils who offer difficulties of one kind or another, before they are placed either in a "special" or an "ungraded" class, or altogether into another kind of educational institution. But whatever the arrangement be, it should never appear as if the placing in any of

these particular types of classes or schools were in the nature of a discrimination against a child. It should be understood that the *special child* is being privileged by having his opportunity. The circumstance that some of these classes in certain school systems have been called "opportunity classes" does not take away from the stigma of being placed there when they are populated by the dunces and defectives of the school.

Various Types of Special Classes.—The "special" class should also abandon the "regular" course of study and adapt itself to the needs of different types of children. There may be a number of different kinds of special classes, each with different functions to meet various needs. In some systems these classes may be assembled in separate school-buildings, at least certain types of them.

Here children who are *difficult of management* may find the educational atmosphere more congenial than that of the regular class because of the elasticity of the course, and because their individual adaptations are more readily taken into account. Here the *manual child*, the *artistic child*, the *child of special aptitudes and difficulties* may find his relief. It will prove an especial boon to children of *unusually rapid development* who would feel the burden of mediocrity and slowness in the "regular" class too harassing. And of course the *slow child* will welcome the special class where he can walk his dog-trot while the quick child runs along the race-track.

Caution, however, is needed here. Children may catch the contagion of our present-day post-haste method of living. We have lost the contemplative, beneficially composed habits of the ancients and of

more primitive races. We have become impersonations of the incessant tick-tack of the watch in our vest-pockets, which races through seconds and never stops. Much of our morbid bodily, emotional, and mental tension is due to the hyperstimulated action of our heart which emulates the clock. Our life "tempo" multiplies normal consumption of energy by ten. All phases of our life, all occupations, all our amusements and pleasures are permeated and infested by this race-course rush. It ruins health and beauty and degrades man to be merely a ramming and on-rushing head which painfully drags its body behind simply because it cannot rid itself of the encumbrance. Children catching this racing fever will soon be psychopathic. The nervously bright child, the precocious child, has no place in a special class where his already overstimulated brain will be further edged on. He ought to be in a *sanatorium school*.

Professor Yasusaburo Sakaki, of Tokyo, quoted in the chapter on exceptionally bright children, page 138, says justly:

Our experiments and their results served to convince us that there is urgent need for reform in the present system of class-making, for this system renders it difficult to differentiate individual children, and consequently those who stand most in need of judicious and expert handling are neither recognized as such nor likely to receive the training and education adapted to their special requirements.

Institutions for Atypical Children.—Sometimes, in the homes of the wealthy, atypical children (and those of the subnormal group as the author has enumerated as of arrested and rudimentary development) are placed

under private tutorship. This is rarely satisfactory, since the study and better understanding of these cases is a matter of profound scientific research and much experience. Besides, the method of private tutorship deprives the children of the benefit and stimulus of companionship and healthy competition.

Atypical children, needing sanatorium treatment and training; children morally or emotionally unbalanced, and those where there is suspicion of arrest of some of the faculties, cannot be successfully handled in day schools of any kind, or while they are living at home. There would always be the struggle between the home and the school environment for the dominant influence in the child's development. In the home there is usually nervous and emotional tension which affects these children who may be considered the cause as well as the product of this condition. Their parents seldom find the right angle of vision to contemplate their needs. Harmony of educational methods and control is practically impossible when the child pendulates from one set of environmental influences to the other. This struggle will be present also under private tutorship in the home. In this way the child will never gain an equilibrium of habits and attitude. Besides, the proper training of these children is only secondarily a matter of instruction, and requires primarily a detailed care of the physical and emotional development; in other words, a well-systematized re-education, a well-regulated general regimen in mental and physical exercise, in habits of life, in diet, sleep, etc.

Hetherington's "Play School" (*cf.* pp. 445 *ff.*), which was a day-school experiment, can well be organized institutionally; the principles would be the same.

As to Methods in Special and Ungraded Classes.—The clinical findings as described in Chapter XVI will give valuable hints as to the kind of training a child should receive in a special or ungraded class.

If it is found that there is lack of *memory-power*, special exercises in attention, concentration, and memory must be devised. If the child lacks keenness of *visualization*, attempts should be made to develop this power. Of course not all such training will succeed, but we must at least try to lead the child along the road where he must go. If he does not respond, let us observe where he *can* go and make his steps as secure as we can. In most cases the mind of the child needs a new start, being bound up in false habits of thought, feeling, and action. We must go back to first principles, so to speak, and re-establish simple life-conditions and experiences. The child must build his own experience, not lean on others vicariously; only in this way will he build for himself a conceptual world all his own, and live his true life. This process will require time, inasmuch as the re-education usually has to begin after the period of unconscious absorption is passed. The conscious effort which has to be made by the child to re-establish simple conditions acts as an obstruction to quick response and new habituation.

It is, therefore, of importance to utilize the natural instincts and the play element in the child as points of vantage; his "paradise of childhood" must be re-established for him. The great world with its wonders must not only be brought close to the schoolroom, but the child must be taken out into it, like Whittier's "Barefoot Boy." This does not imply at all that the child should lose himself in idle play and pastime. He

will learn spontaneously the satisfaction which comes from application to hard work.

Great stress must be laid on *motor training*, through physical and manual culture. Motor exercise (educationally as well as historically, in the development of the racial instincts and impulses) is the foundation upon which the entire mental and moral superstructure rests. All our intellectual and ethical measures and standards are based upon these primordial instincts and activities. Physiologically speaking, motor expression is connected with every activity of the brain, the majority of the cells of which are motor centres.

It would seem unnecessary to state expressly that, in the matter of instruction generally, *objective methods*, adjusted to the needs of the individual pupil, must be employed. As a matter of fact, there is no "special" method for a special class or school; what we need is the individualized application of rational principles of method, such as are essential in *all* school work and for *all* children, in a manner which will reach the "special" child. It is a matter of emphasis and gradation, of regulated speed, of careful attention to the details of successive steps, of the avoidance of sins of omission and commission, etc.

In the matter of *discipline*,¹ firmness and gentleness must combine to produce in the child a wholesome growth of moral habits and principles. A moral life, at least in its lower terms, is largely a matter of well-regulated habits of action and reaction. The problem of discipline is often thought to be a problem of training a child in obedience. But the author ventures to maintain that it is wrong on the part of an educator, parent,

¹ Cf. "The Career of the Child," chap. XVII.

or teacher, to expect obedience. Obedience is not an innate moral quality. Obedience in the ordinary sense is a subjugation of the child's will under that of the stronger adult. It is no virtue whatever. The "obedient" child is either weak or in danger of becoming a hypocrite. Naturally the child is not "obedient" at all. What the child has got to learn is, first of all, *confidence* in his educator, so that he would follow his lead through the belief that his teacher or parent knows best. Again, the child is as much an independent personality as his educator, and must learn through his own experience, in the companionship of his elders whose chum he is. They must go *together* through these experiences which the wise educator will manage to make typical, following the lead of the child's own instincts and interests. Let us be reminded of the culture-epoch evolution of the child, so that this injunction be fully understood. Further, the child should have an opportunity of learning to concentrate his attention through the awakening of his normal instincts in the right sequence of budding periods, and to respond instantly to proper stimuli. His mind should become an ordered domain, where all details are organized and co-ordinated. "Obedience" will then take care of itself. Whenever a child is "disobedient," let us find out what the matter is with ourselves, rather than punish the child.

That of which the child does not possess the potentiality, of course, cannot be accomplished, and the secret of training the special child consists in understanding his individual case, the causes and conditions of his individual combination of abilities and weaknesses, *taking him on his own terms*. In other words, his training

is a process of eliminations and substitutions, and of concentrating the child's attention upon higher motives of action.

Power of *attention* is practically identical with the power of self-direction, of voluntary effort, of will-power. But you cannot give to anybody the will to do. You may give him the physical strength and nerve force which will form the foundation and prerequisite of voluntary effort, and without which, effort and the psychologic development generally would lack their physiologic substratum and counterpart; but you cannot supply the will itself. That must come from within the child's own soul. All you can do is to supply the *motive power* for the exercise of voluntary effort. The most effective agents for the production of this motive power are *interest* and *joy*. There is no action without an emotion; emotion is first, releasing the motion. Joyful exercises inspire the child with self-confidence, so that he will overcome morbid fears and shyness. Many atypical children have fallen behind the others, not from inherent mental weakness, but from a morbid self-consciousness and timidity. Not that you should be sentimental and gushing in your joyful efforts. A little wholesome rigor and sternness will serve as an effective tonic for the disorganized minds and wills you have occasionally to deal with. But all efforts must concentrate on giving the child *confidence in himself*. To accomplish this you, as his educator, must first believe in him so that you may inspire him with your own enthusiasm.

These suggestions, of course, do not fit only the work in the special day class, but also the work in institutions devoted to various types of exceptional children.¹

¹ The Boston public schools have issued a syllabus for special classes which offers valuable suggestions for all special work. Although the

Truants and Incurrigibles; Juvenile Delinquents.—

The problems of these classes have been discussed in various chapters of this book. A few practical suggestions and statements may be added.

First, attention may be called to the valuable publication of the United States Bureau of Education (Bulletin No. 2, 1914) on "Compulsory School Attendance" referred to before. W. S. Deffenbaugh, the bureau's specialist in school administration, has written the first paper in this bulletin. The entire paper is of the greatest value to the student of this problem. Among other things Mr. Deffenbaugh refers to a new kind of officer, the "school visitor" or "visiting teacher," who has become one of the efficient means in some cities for securing regular attendance at school. He quotes Miss Mary Flexner, who has made a recent study of the work of these officers:

The visiting teacher was created to bridge a gap in the existing school machinery. Her province lies outside that of the regular teacher, the attendance officer, and the school nurse, though, like the attendance officer and the school nurse, she goes into the child's home. To her is assigned the group called the "difficult" children, and it is her aim to discover, if possible, the cause of the difficulty which manifests itself in poor scholarship, annoying conduct, irregular attendance, or the need of or desire for advice on some important phase of life. It is too much to expect the regular teacher, handicapped as she is by her large class, to cope with such situations. Nor is it to

backward, even the mentally defective child is considered first in this syllabus, the work outlined fits admirably into courses for potentially normal, derailed, neglected, delinquent, and other classes of special children. Of course only in its broad outline; the adjustment will have to be made to fit the case. The syllabus contains directions for manual work, art-work, domestic science, games, entertainments, folk-dancing and gymnastics, nature, language, number, reading, penmanship, spelling, and sense training.

be expected that those qualified to act as attendance officer or school nurse, were they not already burdened, should do the work of the visiting teacher. In her is united the training that makes a teacher and a social-service worker, and it is because of this combination that she is able to widen the regular teacher's reach and help her to interpret and solve the problems as they present themselves. From the school she learns that the child is apparently making little effort, that his work is "C" or worse, or that he is perpetually making trouble in the classroom and is never attentive, or that he seems lifeless, unable to keep pace with the class, or that he attends so irregularly it is impossible to teach him anything, or that he has not time to study, and the situation at home is such that he must leave school and go to work.

With these facts as clues she sets to work; it is impossible to define her methods, for they vary with her tact, her resourcefulness, as with the specific character of the problem before her. Briefly, they are the methods that spring from a friendly interest, an intimate personal relation.

Between the home and the school the visiting teacher vibrates, carrying to the former the school's picture of the child, and returning to the school to reinforce that impression or to shed new light upon the problem. There is no fixed number of times that she travels this path, as there is no fixed hour of the day. The urgency and complexity of the situation alone determine her movements. Nor is there any regular routine of action that she follows. Whatever in her judgment seems imperative she endeavors to effect, using to this end everything that the ingenuity of man has devised to make smooth the rough places in life. It is a focusing of interests that she demands. The child is the pivotal point on which she hopes to bring all her knowledge and experience to bear. Sometimes it is the expert teacher's training that she invokes; sometimes the psychologist or the physician, general or special, that she consults, or again it is the social worker to whom she appeals. Before these she lays the facts, the reasons why her services have been sought, and from them she asks co-operation.

The results achieved do not always show a complete cure. In some cases there has been a marked improvement in scholarship, conduct, or attendance. At least a good start in the

right direction has been made. In others the child has been transferred to another class—regular, special, or ungraded—or to a trade school, where his chances at succeeding in making a place for himself are increased. In others the information that the visiting teacher shares with the child's teacher has resulted in a change of attitude on her part or an expansion or contraction of the course of study, or in giving the child extra instruction in study periods or out of school hours. Finally, he has been helped to promotion, even to graduation.

In the paper itself Mr. Deffenbaugh studies, also, the problems of the immigrant, of child labor, or poverty, or private schools, etc. He has, as he expressed himself recently in another place, a new conception of what a truant officer should be:

The old idea of the truant officer as a "kid cop" is passing away. The new truant officer is a man of entirely different type; quite frequently, in fact, a woman. In several cities a large percentage of truant officers are college graduates; in other cities they are men and women with experience as social workers; but whether college graduates or not, they are required to know and understand the home conditions of school children. Attendance officers of the new type are interested in removing fundamental causes of truancy rather than in merely catching the offenders. The chief cause of failure to obey attendance laws, according to the National League of Compulsory Education Officials, is inadequate family life. Resolutions adopted at the recent meeting of this organization, therefore, called for "adequate and uniform marriage and divorce laws for the protection of childhood; enactment and enforcement of laws pertaining to the issuance of marriage licenses that will prevent child marriages and prohibit the marriage of persons physically, morally, and mentally unfit to wed."¹ They urge that the juvenile courts be given definite authority to place parents as well as children on probation for truancy and delinquency; they ask better State supervision of dependent children; civil service for

¹ Cf. Chapter XIX.

all truant officers, and the maintenance of parental schools, special rooms for truants and incorrigibles, and health inspection of schools as material factors in child welfare. The attendance officer of the new type is to be a far better trained man or woman, and is to receive better pay. Superintendents of some of the largest school systems in the United States joined in advocating a minimum salary of \$100 per month, with services for twelve months in the year, in order that the officers may be in constant touch with the home conditions of the boys and girls.

Some of the remedies suggested may not touch the root of the evil, although all of them deserve attention and discussion. It must not be forgotten that the regulation of marriages is a two-edged sword; again, that many boys (and girls) play truant and are "incorrigible," because the routine of the school does not appeal to their special type and genius.

In his "Conclusions," at the end of his paper, Mr. Deffenbaugh states the following demands as the most important factors in the enforcement of compulsory education laws:

1. An annual school census taken by the school authorities of the city or district.
2. Prompt reports by teachers of public and private schools of all absentees not legally excused.
3. Properly qualified attendance officers who give all their time and attention to the enforcement of the law, and also school visitors in cities having a large foreign or negro population. (?)
4. State agents to see that the laws are enforced.
5. Special schools for truants and pupils irregular in attendance.
6. Relief for indigent parents having children of compulsory age.
7. A definite annual period of attendance.

8. Well-enforced child-labor laws.
9. Employment certificate made to employer, and not to be used by child when seeking a new position.
10. Proper penalties on all concerned in the enforcement of the law.

The suggestions contained in the foregoing paragraphs apply also on a large scale to the treatment of youthful offenders. A large proportion of the criminals are boys of 17 or 18, who, as Judge Edward Swann, of New York, says, in the eyes of the law are "infants."

The old idea of the "*reform school*" as a penal institution is passing away. The youthful offender must be considered as an undeveloped, underdeveloped, handicapped, or derailed individual, whose chances in life should be carefully studied. His treatment is an educational problem, not a judicial one. For this reason it must be made dependent upon a clear diagnosis of the educational status of the individual offender, who should not be looked upon as essentially different from the boy or girl who subjects himself or herself to measures of parental or school discipline. This view-point has been fully discussed in various chapters in this book. Says Professor Thomas H. Haines, in the article quoted before:

There will result a new conception of the work of our reform school and also a new conception of the work of its field officers. The reform school is not to be expected to overcome native defect, but it is to be an experiment station trying out doubtful cases, ascertaining what retardations may be overcome. The field officer is to be a very highly trained practical sociologist, skilled in all the arts of guiding into proper lines the forces of socialization. His is to be the art of making personalities.

And Doctor Healy, of Chicago, in an article in the *Journal of Educational Psychology*, May, 1915, entitled "An Outline for Institutional Education and Treatment of Young Offenders," gives his first two main points as follows:

A. The entire aim of the activities of a training school for delinquents is to fit the individual to cope with all phases of an ordinary social environment.

B. The human material to be worked on in this type of an institution must be selected for it by prior diagnosis. Uneducable persons do not belong therein. (Under the exigencies which some institutions have to meet, mental defectives are accepted, but, of course, needs of defectives are only to be fulfilled by giving them special discipline and education, with which we are not here concerned.)

All this sounds different from the traditional attitude toward the unsocialized elements which rub up against the laws of organized society. It stands to reason that these will never be socialized if they are handled as outcasts and moral lepers.

Abnormal and Feeble-Minded Children.—The segregation of an abnormal and feeble-minded child in separate classes in day schools does not solve his problem at all, not even during the prepubescent period, when he (or, rather, she) is said not to be dangerous or in danger. Outside of school hours he mingles with his normal fellow pupils, and with children in general in his parental environment. This benefits neither the abnormal nor the normal. And when he can no longer be retained in his special class, having passed the age of compulsory school education (if this reaches him at all); after all the money and time and energy the school has spent on him, *he still remains feeble-minded* or degenerate, and

must be segregated from the body social. In other words, he is just as much a burden to society as if he had not gone "to school" at all, and the money spent on his schooling cannot be considered in the light of an investment.

It has been pleaded that inasmuch as there are as yet very insufficient provisions for placing feeble-minded and abnormal children in institutions for custodial care, they should at least be segregated in special classes. As a *makeshift* such an arrangement may pass, *provided the feeble-minded are not*, in these classes, *mixed with children of other types*. But we must face the issue squarely and state the case clearly.

In the first chapter of this book, and repeatedly in other places, attention has been called to the fact that these children, unless properly taken care of in time, will be a burden to society anyway, with a disproportionate cost of maintenance, in almshouses, poor farms, reformatories, prisons, and with a tremendous apparatus of police, courts, charity and correction commissions, etc., to boot. Properly placed from the beginning, they will reduce the cost of their presence in society enormously. In the following paragraphs just a few of the arguments sustaining this contention will be given.

The plea has been made that the finances of the commonwealth do not allow the establishment of custodial institutions rapidly enough. It can be shown that the money *which is being expended* for special classes for these unfortunates is wastefully greater in amount. Let us calculate.

In the State of New Jersey, for example, the average cost per pupil, calculated on enrolment, including interest on investments, is about \$35 per annum, that is to

say, for the ten regular school months.¹ According to a recent State law, classes for the "mentally defective" are to be formed which should have no less than ten and no more than fifteen pupils each. The usual number of pupils in a regular class varies, but is certainly at least three times as high as that in the "defective" class. This alone would mean that each pupil in such a special class would cost about three times as much as an "ordinary" pupil, making the average per capita cost at least \$105. The State, however, pays an extra bonus of \$300 for each teacher of such a special class, which raises the per capita cost to at least \$125. Figuring on the basis of twelve school months, as we do in institutions, it would raise the minimum expense to \$150. The average expense per inmate of the Vineland Training School is given as a little more than \$250; figuring the interest on the investment would raise this to about \$290. The Vineland School, with its relatively small number of inmates and model equipment, is comparatively expensive as compared with the \$216.64 which is the per capita cost in the Massachusetts Institution for the Feeble-Minded, at Waverley. The figures for the New York State Institution at Syracuse are similar. Quoting from Doctor Helen MacMurchy's ninth report (1914) on the feeble-minded in Ontario:

In a well-organized and well-managed County House of Refuge, on a good farm in Ontario, the weekly cost per inmate varies from \$1.50 to \$2.50,² according to the fertility of the land, the type of building and equipment, and the thrift, skill, and knowledge with which farming and housekeeping are carried on.

¹ In some school systems, as in Newark, the schools are now open all the year round.

² Or \$78 to \$130 per year.

In an industrial farm colony for mental defectives those under the mental age of 3 years (formerly called idiots) are not able to do much. The middle grade and high grade may be taught to pick the stones of a field, and carry things from one place to another under direction, and these occupations have some commercial and industrial value. All those of the mental age of 3 to 7 years (formerly called imbeciles) can contribute something to their own maintenance, and in many of them there resides some ability, which should be found out. Their powers are frequently sufficient to enable them to partly earn their own living under good supervision in an institution.

Permanent care in a suitable institution is the only successful, economical, and humane method of dealing with mental defectives. . . .

In the best institutions of this kind the industrial work grows more practical every day, and thus better and more economical administration is secured, as well as more satisfactory training of the children.

They should do all their own work, make and mend all their own clothes, weave the cotton, linen, and woollen materials used in the institution, make their blankets, produce vegetables, flowers, and fruit, and food products of all kinds, and learn every industrial trade and other employment that can be made useful in their own or other institutions, especially those relating to food, clothing, agriculture, and building.

At Darenth Industrial Colony, Dartford, England, the following estimates have been made:

Forty-five feeble-minded women can do the laundry work which twenty normal women (good laundry workers) can do. Taking a rough average of all kinds of occupations, four feeble-minded persons can do the work of one normal person.

Doctor Fernald, Waverley, Mass., has shown that in an industrial farm colony for mental defectives strong, able-bodied men can practically earn enough to support themselves, if a fair market price is received for the farm produce.

In Vineland there are from ten to fifteen inmates, one employed in the school, one in the engine-room, one in the shops, and a number on the farm, each of whom does the work that otherwise would have to be done by a normal person. . . .

As a matter of fact, as has been shown in the chapters on efficiency and on the feeble-minded group in this book, "high-grade" feeble-minded may, under custodial care and supervision, reach a high grade of skill in various occupations, such as lace-making, printing, weaving, etc., which would give their products a market value above the cost of their maintenance.

The following figures will assist in understanding the relative cost of special classes and custodial institutions:

Taking the figures given above as a basis, the annual rate of expenditure for one "defective" pupil would be \$105; for an entire class of 15 this would mean an annual outlay of \$1,575. It will require \$3,150 to care for 30 pupils for ten school months; \$6,300 to care for 60; \$12,600 to care for 120 children. This money will easily allow the purchase of a small farm and the erection of buildings to start a colony with. Maintenance, including interest on the investment, in the succeeding years will be considerably cheaper than the maintenance of the special classes, and the saving will soon become evident.

More than that. In a city having a school population of 100,000 there may be a maximum of 2,000 abnormal children of all kinds, roughly estimated. Even if we should count the cost of each individual "special class" defective only at an even \$100, this would imply the expenditure of \$200,000 *annually*, if all of these were cared for in special classes. The enormous economy if custodial institutions and farm colonies would be established for them is at once evident. And if they are *not* cared for? This book gives the answer to this question on almost every page.

Special Provisions.—Some municipalities have already included in their school system *special classes*, or *day schools*, for *blind*, *deaf*, *anæmic*, *tuberculous*, and *crippled* children. If the latter are tuberculous, they will share the provisions made for that class of children. With those cripples who are not tuberculous it is largely a matter of transportation to and from school, and of adjustment of the school curriculum. For the anæmic child and, of course, also for the tuberculous patient, the *open-air* school is the ideal provision. Some of these open-air arrangements are in the form of roof-gardens; others are tent colonies in open spaces; still others make use of barges floating on rivers and lakes. The school work itself must take the limit of physical strength and endurance in these children into consideration. The work done in New York may be considered an example.

The *blind* and the *deaf* have heretofore been segregated in institutions. This method of providing for them has recently been superseded in many places by arrangements through which they are accepted into the regular classes under special regulations. This gives them the opportunity to adapt themselves to natural life conditions such as they will have to battle with in their struggle for existence when grown up. This arrangement, however, presupposes a home training of these children before they are of school age. Where this training cannot be given in the home it should be given in special institutions or home schools. The *International Sunshine Society* has done some pioneer work with *blind babies*. The most remarkable and, indeed, leading work for the training in speech of *deaf children* before they are of school age has been done by the Garrett sisters in Philadelphia. Their Home School, since

1893 conducted by Mary S. Garrett as a Pennsylvania State Institution, has done a very great amount of good, and has shown the way for the true solution of the problem.

Of course when a blind, deaf, crippled, or otherwise physically defective child is found to be also mentally difficult, his case requires adjustment to that condition.

The *New Jersey Commission for the Blind* maintains a department for the home teaching of the blind, having ministered to 266 blind persons scattered throughout the State in 1912-13. There is also a department of investigation and prevention. The commission, in its report for 1913, made the following typical recommendations:

Family care and normal life for the blind of all ages in preference to institutional care and segregation.

(a) The blind baby should be properly trained in its own home, with the help of the district nurse, friendly visitor, and home teacher.

(b) The blind youth should be educated in special classes in the public schools in preference to residential schools.

(c) Blind adults should be trained and given opportunities for industrial self-support in their own homes, rather than segregated in State industrial homes.

(d) The deaf blind, both youth and adult, should have individual instruction in their homes.

(e) The epileptic blind should be provided for in their own homes or in boarding homes of the sighted.

(f) The destitute blind should be provided for in their own homes or in boarding-homes of the sighted.

The Vineland Training School should be equipped to train the feeble-minded blind of the State.

In this schedule of suggestions there seems to be one self-contradiction. If the feeble-minded blind are to be

trained in an institution for the feeble-minded, why should the epileptic blind not be transferred to the colony for epileptics?

Otherwise the suggestion that the blind, like the deaf, should be trained in a manner which will give them from the start a habituation to natural conditions, so that they may be better equipped for conducting their life in the world of the non-defective, is most sound.

It would seem hardly necessary to refer once more to the case of Helen Keller, who, in her wonderfully inspiring life, has demonstrated the truth of these contentions so powerfully. Another equally handicapped girl, *Kathryne Frick*, of Harrisburg, Pa. (**Case 76**), deaf and blind, now 18 years of age, has been similarly trained at the Pennsylvania Institute at Mount Airy. She has learned to speak clearly and to write a good English; she reads the classics, is generally well read, runs a sewing-machine, threading her own needle, and is a wizard with her fingers.

CHAPTER XXV

SANATORIUM SCHOOLS FOR ATYPICAL CHILDREN¹

Purpose of the Sanatorium School.—An institution for atypical children should be a homelike school where the children live all the year round.

It must attempt, *first*, to understand the child, his tendencies, characteristics, or genius; *second*, to place him in harmony with the world around him by suitable adjustment in the educational environment; *third*, to encourage and develop those aptitudes in him which will best prepare him for independent existence in later life, training him to reach his highest performance level of skill and efficiency.

Tests and Records.—Before a pupil is enrolled, his previous history must be carefully studied. Also, physical and mental tests of the order described in this book must be made, so that there be no guesswork in recognizing his real needs, and no haphazard plans for his education. These examinations need to be repeated at regular intervals; the body measurements as often as once a month.

All work with the child must be based upon a close *correlation of educational and medical science*.

A careful *record* should be kept of each pupil's development, sleep, baths, diet, exercise, etc. Whatever ele-

¹ Some of the suggestions contained in this chapter are derived from the practical work done at "Herbart Hall," Plainfield, N. J.

ments may in any way affect the physical or mental health must be carefully studied. The pupils may be divided into small groups both for "school" training and for "home" training, and will have to be regrouped and readjusted frequently to meet the changing conditions.

All members of the staff, whether they be teachers or caretakers, or even other employees (those who are intelligent enough to make observations), must be expected to make frequent reports covering the pupil's mental and moral conduct, his health, etc. These reports are best made on cards, which are easily carried and filed. Every interesting observation is supposed to be recorded: the pupil's personal habits, visits at home, visits from parents or relatives and friends, and all occasions that make up the history of the child while under observation and training. The object is to establish a *continuous child history*, which may furnish data for a better understanding of the individual case. It is required that these reports should contain *facts*, not opinions. All judgment of a child's conduct or condition ought to be held in abeyance until reports, covering the various phases of the child's life, are collected to insure accurate and impartial analysis of the various factors operating at a given time. For example: a child's unresponsiveness in class, which to the teacher may appear as laziness or lack of interest, or again, troublesomeness apparently requiring discipline, assumes an entirely different significance when it is known that the child has had a sleepless night or has been constipated for days.

Monthly reports may summarize a child's progress, difficulties, or retrogression.

Daily Life.—The atmosphere of a healthy family life must be carefully preserved. It is best not to have dormitories, but small rooms for one or two, or the cubicle arrangement which is found in some of the best private schools of the country, *e. g.*, at the famous Grotton School. A child should be encouraged to develop an individual atmosphere in his own room, with pictures, toilet necessities, hangings, and decorations of his own. Birthdays and all festive occasions which usually brighten up homes and communities may be celebrated in the old-fashioned manner. Such a home atmosphere will entwine the sentiments of the children around their school home, giving a natural and happy life content, such as rational treatment in the ordinary home and school will supply under natural conditions.

The *daily personal life* of the child should not be intrusted to the care of a mere attendant who is an untrained menial, but should be under the supervision of a caretaker who has had educational training.

Discipline should be based upon a clear and fair understanding of conditions and motives, coupled with a consistent and constructive attitude. There should be a distinct effort to develop an ethical perspective and a moral atmosphere. Each child must be trained and encouraged to develop his own individual interpretation of life in terms of service.

The *school lessons* should be adjusted to the fatigue curves of the day, considering the hours when mental alertness is at its maximum or the reverse. Outdoor work should be done whenever possible; even the more formal lessons will gain from open-air arrangements.

Physical training, including eurhythmics, nature study, art, and manual training, gardening, etc., must



FIG. 39. May festival.

alternate systematically with seat work and book-lore. The play and the dramatic instincts must supply the motive in most instances to appeal to the vital interest of the child. On the other hand, the child must learn the joy derived from overcoming obstacles, even if these obstacles were his own lethargy or lack of interest. He will easily be convinced that many a task which looms up forbidding and uninteresting to him may reveal hidden beauties and powers—and its conquest may unfold to him unexpected possibilities of his own mind and body. This method of testing a child's strength and self-control to its limits is, however, very different from the old idea that there is virtue "per se" in having a child do a task just because it is loathsome to him.

The lessons, occupations, exercise, diet, and general regimen must be carefully planned for each pupil. In the matter of school work it is best that the work, on the basis of a general outline as suggested later in this chapter, be regulated weekly in advance by each individual worker. These advance plans should be very much in detail, so that the principal may look them over for criticism and suggestions. Comparing the new work as planned with the work which had been accomplished the previous week, together with the principal's visits to the classrooms and inspection of children's work, gives immediate opportunity for checking up and readjusting work and method to individual cases. As soon as it is noticed that the child does not respond as was expected, the subject-matter, the method of presentation, the personality of the teacher, etc., not to forget the physical and hygienic side of the problem, must be subjected to analysis. Failure on the part of a child should never be primarily placed at the child's door.

Outside of the set lessons, the groups, under careful supervision and guidance, should have ample opportunity for work, games, and occupations. Like the work in the school, the free time must be carefully planned and organized, enlisting as far as possible the spontaneous interests of the children. Every game, every occupation, every walk or excursion should have an object, and were it only that of organized exercise or, for that matter, systematized observation. There should be no waste of time or energy. *This is the very secret of training for efficiency.* The children should be kept constructively busy all the time. Individual tendencies, interests, energies, and other attributes must be given expression in a manner which will best suit the pupil's need and contribute to the activities of all. Of course the children must be largely unconscious of the underlying plan. Much depends upon the skill and ingenuity of the teacher to make the chosen games and occupations spontaneous. There should be also excursions to factories, to historic places, to points of interest and pleasure, etc.

INSTRUCTION AND METHODS

No Patent Methods.—The question has often been asked of the author: "What particular methods do you use in educating and teaching exceptional children?" There is a feeling among those unfamiliar with work of this kind that special methods of instruction, based on entirely new principles, or some sort of patent prescription, must be employed with these children. This is a misconception. Most of "these children" are, anyway, just children in need of a better understanding of their needs. It is necessary that teachers "specializing" with

these "unusual" types (in reality they are quite usual; that is to say, many of them are) have a broad and thorough knowledge of educational principles and methods in general, such as are used with "ordinary" children. Also, a teacher must be resourceful, and be in full command of his "stock in trade." He must be able to rearrange and readjust his methods and principles instantaneously so as to fit an individual case at a given moment. More emphasis must be laid on some reactions than upon others. The factors of *emphasis* and *individual adjustment* are the real secret of success.

Objective and Creative Methods.—Generally speaking, the objective and creative methods are most effective. And the emphasis must be on *experience*, not on book-learning. It is a common error in dealing with children to take too much for granted. Word knowledge and memory are confused with a knowledge of things and realities, also with judgment. It is important, first of all, to definitely circumscribe the real mind content of each child. Having established the apperceptive basis, the danger of overestimating a child's actual knowledge, or of underestimating his power, is avoided. Each child must be taken at his own terms. The school environment must be so organized as to permit quick adaptation to changing needs, to the mental caliber and to the gait of the individual.

Native Experience.—The various branches of instruction are so many phases, or facets, of world knowledge, serving also as points of vantage from which to survey and interpret human experience. The experiences of the child himself form the focal point in which the teacher, as mediator of the world of experience and

reality, must concentrate its rays as upon a periscopic lens.

It is a common error to give a "definition" as a starting-point for a new thought. In reality a definition is the highest form of abstract qualitative analysis. Therefore it represents the culmination of human knowledge. To give this first is to give what a child can least comprehend. His ability to retain a definition depends upon memory, not upon understanding. It is far more valuable to the child to form his own concept, even if it be incomplete and incorrect, than to make him accept, upon faith and authority, the clearest crystal of human wisdom. Under guidance he can later check up and correct his own imperfect ideas through increased experience, and by comparison with the concepts of others. *To accept the wisdom of the ages is not the first step in mind development, but the last.*

One way to clarify the child's ideas is to have him clinch each new set of experiences by formulating them as exactly as he can in his own words.

Course of Study.—Naturally the teachers must be expected to follow a more or less definite course with each child. In an organized school system a definite "course of study" is needed. Such an outline, however, cannot be specific in its application to groups and individuals. It must not pretend to be more than a general exposition of principles, methods, and practical aims. It can serve only as a working basis for more particular directions of adjustment. A combination of the general plan and the specific recommendations gives the teacher a fairly definite course of action for each child.

As has been stated before, the teacher must be of a mental type which can work over these general and

particular directions in such a manner that the daily and hourly variations of a pupil may be promptly gauged and met. While he must know his limitations and keep within the general and particular plan, he must not be a blind follower of the letter, or a mechanical agent.

Methods of Presentation.—When the pupil is to have a text-book in his hand, as in geography or history, the subject-matter should first be developed orally and practically. His apperception should be called into action, and upon this foundation alone can his further progress be built. While it is legitimate to train a young pupil occasionally to obtain information from the printed page without previous objective presentation, so that books may become handy and valuable helpers to him, this method of information must not be the rule. The subject-matter comes first. The book can serve to clinch and systematize the matter discussed and experienced, and may be used advantageously for review work.

It would be impossible to give here the specific methods applicable in individual cases. Also, only a few examples of subjects in a general course of study may here be briefly described.

SENSE TRAINING

Use the songs presented in "Timely Games and Songs for the Kindergarten," by Reed-Brockunier:

"The Bell-Ringer." (Sense of hearing.)

"Two Little Windows." (Vision.)

"The Mystery Man." (Touch.)

"The Wonderful Bag." (Taste.)

"The Surprise." (Smell.)

Color and Form.—In connection with gift-work, parquetry, ring-laying, colored papers and paper cutting and pasting. Painting in solid colors, also in oil on wood, etc. Building-blocks, geometric solids, etc. Develop ideas of *temperature* and *weight*—cold, warm, tepid, heavy, light. Recognizing materials and goods by *touch*—rough, smooth, silky, woollen, velvety, etc. Identifying objects and materials by indirect touch, using a stick or other intervening medium. Sense of *location*. All these exercises can be varied in many ways, and there is hardly a lesson on the programme which cannot, in one or the other of its aspects, be a sense-training lesson. *Articulation* is to be connected with acute hearing.

ARTICULATION

Articulation should be consistently followed up with each child, in school and out. There is hardly a child anywhere that should not be improved in enunciation, and teachers must never be satisfied with mumbled or ill-connected sentences or answers. In the formal classes where articulation is the special object sought, the teacher should carefully follow the process of language evolution (articulate speech) as it has come down to us through the centuries. Breathing in the upright position was the primary condition for human sounds and articulate speech. *Music* is one of the first forms of expression and is, therefore, important as a starting-point. Deep breathing (diaphragmatic) is essential, and special breathing exercises form a part of the course in this branch, in music, and in physical training. Each pupil must have regular drill in vowels at different pitch-levels and tone-intensities. This phase of the work may

be made more interesting by the use of a musical instrument. The child may eventually learn to carry entire tunes, using one vowel sound. With the introduction of the consonants, there should be free use of the phonic elements and diphthongs.

In case a pupil shows nervous fear or a tendency to stutter while speaking or reading, insist that the child take a deep breath before attempting to speak.

MUSIC

Music has the fourfold aspect of (1) rhythm; (2) tone; (3) melody; and (4) harmony. Being an elemental force in civilization, music plays a most important part in education and re-education. Not all children may learn to discriminate harmony from discord, or to carry a tune. Some will never be able to reproduce a musical tone at the right pitch, while others have the natural musical ear. But all can be trained in rhythm; in fact, rhythm is the most fundamental thing in all life processes and thought processes, and must therefore be religiously cultivated.

In addition to its significance for proper articulation, music is the expression of emotion, and as such is worthy of the most careful cultivation. Singing should be utilized for emotionalizing, in a natural and sane way, the various aspects of nature, of man's attitudes, aptitudes, and aspirations; of occupations and vocations. In connection with it, dramatic expression should be practised. There are motion-songs, dance-songs, etc.

Simple instrumental music, and if it were merely the rhythmic tapping with sticks, or drumming, should be introduced to be developed into some form of orchestral co-operation.

PHYSICAL TRAINING AND GAMES

As long as the season allows it, much of these exercises should be outdoors. In fact, even brisk winter weather is the best thing for outdoor sports.

1. Exercises in *standing erect* (the distinguishing characteristic of man as compared with the lower creation), with chest out, abdomen drawn in, muscles tense. Proper standing is very important; it is exercise. A consciousness of all muscles is developed, as it were. Lax standing is bad in every way. Standing should be practised for an increasing number of minutes, beginning with fifteen seconds, not longer than two minutes at a time, but repeated until pupils have control. Never go beyond the fatigue-point, but push that point out farther and farther. The same rule holds good for all exercises.

2. Exercises in *walking* and *running*, with hands on hips, or in combination with free and calisthenic exercises. There are two ways of walking and running: one, with muscles tense; another with muscles more or less relaxed.

3. Exercises in complete *relaxation*. Practice with one limb at a time, or with the abdomen alone, the neck-muscles alone, etc., until the children know what is wanted. Then have complete relaxation (limpness), standing or reclining, and partial relaxation in walking, etc. *This is a very necessary exercise*. Nervous pupils are apt to be always on tension.

4. Regular *free and calisthenic exercises*, with hands, arms, legs, including raising of knees, bending of knees, tiptoe exercises, wands, dumb-bells, Indian clubs, dance steps, etc. Introduce folk-dances. Combinations of all

kinds, also with walking, running, dancing, etc. Eurythmic exercises for the free expression of emotions, also in dramatic elaboration, are of great value.

5. Exercises in *formation*, including marching, lines, figures, "Reigen," etc.

All these exercises can be developed into dramatic expression.

6. *Corrective and curative exercises*: Breathing, abdominal exercises (bending, rotating, churning, etc.), balancing exercises (with or without arms outstretched) like walking along chalk-line, or raised board, on various points of support, walking blindfolded, stepping over rungs of ladder lying horizontally on floor, etc. Active and passive exercises on mat, sitting on chair, etc. Setting-up exercises, massage, etc.

The first and principal aim should be to train the pupils in prompt, vigorous response, and in proper co-ordination.¹

7. *Apparatus-work*: This may be given either in the indoor or the outdoor gymnasium. It must be systematic, under the supervision and direction of the trained teacher, and cautiously used as mere play exercise. When properly used it is very helpful. Use trapeze, rings, upright ladder, horizontal ladder, parallel bars, horizontal bar, climbing pole and rope, see-saw, jumping and vaulting apparatus.

8. *Games*: Ball games of various kinds alone offer a very great diversity of wholesome exercise. Games of precision, like the throwing of rings, can be easily practised, also outside of the regular gymnasium hour. Children should dramatize what they read and study about in their other lessons, in their play activity. Connect

¹ Cf. "The Career of the Child," chaps. IV and XVI.

with camping, sewing, occupations. Build wigwams, bridges, etc. These games may assume the character of group games, gymnastic dramatization, as in folk-dances, etc. Let the pupils play Indians, Eskimos, carpenter, birds, etc. This harmonizes with the primitive stages in the development of civilization (totem-worship, tribal emblems, animal-dances, etc.). Also outdoor games, like red rover, fox and geese, puss-in-the-corner, tether-ball, croquet, tennis, baseball, simple football, cross-country runs. Winter sports: snow forts, snow men, coasting, skating, etc.

ART-WORK

In regard to this branch of training ("training in civilization") it seems best to refer to the author's book, "Some Fundamental Verities in Education." Here are given only a few hints:

Clay-Modelling of familiar forms and statuettes should precede the painting thereof and can be used in connection with the teaching of form. The connecting-link between modelling and flat painting is:

Free-Hand Paper Tearing and Cutting, which still deals with the mass, this time with the entire surface in solid character. This is the first projection of the solid on the flat. Shadow and silhouette work. Paper designs.

Designing and Composition.—This can be introduced by the use of *blue-printing*. Arrange leaves, flowers, sprays, even cut-out paper designs, in printing-frames, and print. The white designs on the blue background may afterward be colored appropriately by the pupils. Or they may be cut out and used for stencil-work. Or they may be imitated in free-hand cutting and free-hand solid painting (in one color).



FIG. 40. Blue-print design from nature: Ferns.



FIG. 41. —Blue-print design from nature: Violets, arranged by pupils.

Painting.—Use ink-washes, water-colors, oil-paints, crayons, *without outlines*, giving the bold swing of the object: vegetables, flowers, plants, vases, still life (Japanese models). Painting, in dealing with the large mass, precedes drawing.

Drawing.—Use crayons, and large marking and drafting pencils first. Avoid outlines, except to mark leading points, but give the bold mass and swing with large shading. This form of expression is most suitable for illustrative work. Throughout the work in all branches it is very desirable to have the pupils construct imaginative drawings, either original or portraying their mental images of incidents in fairy-tales, legends, myths, and other forms of folk-lore. Outline-work at this stage is in the nature of picture-writing.

Cutting and Pasting.—Commence with the cutting and pasting of pictures, in making *scrap-books* for geography, history, domestic work, nature-work, etc. The pupils are expected to make their own scrap-books, sewing manila or wrapping paper into books. These may be decorated by their own designs.

Cardboard Construction of familiar objects, like boxes, trays, houses, wagons, etc., should be used to introduce the third dimension, the concrete concept of volume. The objects may then be painted with washes and crayon.

Clay-work may be colored. Designs of Indian or other character may be made for *pottery*.

Raffia and Basket Work needs no special description here.

This leads over to other forms of *manual work*.¹

¹ Cf. "The Career of the Child," chap. VI, "The Manual Principle," and chap. VII, "Kinds of Manual Expression."

MANUAL TRAINING

The foregoing, of course, contains a great deal of opportunity for manual training. The following more specific suggestions refer to several definite forms of it, more particularly adapted to serve, in addition to their general educational value, as a preparation to eventual industrial training, or training for manual vocations.

Shop-Work.—The aim of shop-work is to develop motor control in specific forms, and to acquaint the pupils with the *typical tools* (hammer, saw, hatchet, plane, chisel, auger, screw-driver, etc.) and the *typical occupations*.

Motor Training.—Begin with large movements, proceeding but slowly to exercises requiring the activity of the finer muscles. Thus, there should be rough work at first, with big pieces of wood, and a modicum of accuracy. In this group of exercises may be placed the rougher type of outdoor work, such as crude masonry, levelling of ground, digging ditches, making road-beds, garden work, etc. Also large rustic building, making of concrete foundations and other structures, building of huts, wigwams, houses, and woodcraft of the pioneer kind. This is in harmony with the principle of adjusting training to the culture epoch periods as described elsewhere. It corresponds to the early stages and requirements of primitive, pioneer, and frontier life. Thus, it connects the principle of motor training with the following:

Typical Occupations and Tools.—Here enters also the element of dramatic representation, as in the kindergarten games, of the blacksmith, the carpenter, etc. The shop leads over to reality. At first the work is only a more or less playful imitation of adult activity. As the



FIG. 42.—Exhibit of pupils' work. Carpentry, basketry, dressmaking, weaving, etc.



FIG. 43.—Exhibit of pupils' work. Miscellaneous.

adult standard of accuracy cannot be understood or reached by the child, the ordinary "sloyd" courses are contrary to the biological laws of child growth. Just as the race has, through industrial development, learned to conquer the earth and to produce civilization, the child will be helped, through his experience in shop and outdoor occupations, to reconquer earth's forces for himself and to build up his own world of concepts and culture.

Shop-work, in this sense, is *laboratory-work*. The child becomes acquainted with the nature of materials and with the mechanical forces which produce them as raw material, and with those other forces by which the raw material can be shaped into humanly useful things.

Large work, in the making of rough sleds, sawbucks, trellises, etc., will precede the more exact tasks of box-making, carpentry, making and mending of furniture, setting of window-panes, work in tin, wire, lead forging, work on the lathe, etc.

There will be much opportunity for co-ordination with other branches, so as to *objectify* them, and to make use of the child's creative and imaginative abilities to *illustrate* facts in geography, nature, history, etc.

A detailed course will depend much upon the composition of the groups and upon individual aptitudes.

Sewing and Needlework.—Both boys and girls should have instruction in the occupations that come under this head, even though it is supposed that girls should specialize in this work. But there are boys who are endowed with capacities in these lines (tailors, shoemakers, weavers, etc.), while there are many girls whose special propensities lie in other directions.

The first step should be to ascertain definitely how much the pupils know about materials, threads, needles, threading a needle, kinds of needles for different work, kinds of work, such as sewing, embroidering, knitting, crocheting, weaving, darning, patching, etc. They must understand the meaning of the words, not from definitions, but from examples. Study materials of which threads are made. Kinds of goods: linen, cotton, wool, silk, etc. Where and how they are obtained. Use of needlework.

Have the pupils find out all these things as far as possible in their own wardrobe, in their room, in the building. Have them state and write down the correct name applied to each article, the material it is made of, the process of manufacture, its use. Find out how many of these they have *seen* being made. Excursions to factories, workshops, etc. Mechanical *vs.* hand production. Looms, sewing-machines, other mechanical contrivances. Arouse interest in developing the ability to *make* things.

With the girls appeal to the *home-making instinct* of woman. Correlate with the household aspect of the work, keeping things going in the home. With the boys emphasize the *vocational side*.

The work itself must at first be primitive, large and coarse. The real sewing as a mechanical art is an after-development and not desirable for young pupils. It is left to older girls and boys.

Use *shoe-strings* with metal ends, the cheapest kind. With them the pupils can practise all the different kinds of stitches on perforated cardboard. Even the embroidery and buttonhole stitch can be so introduced. Make cardboard constructions on a large scale, like baskets,



FIG. 44. Sand-table work. "The lake-dwellers."



FIG. 45.—Pupils' work. Vocational training-school. Building a house with concrete foundation.

boxes, etc. The aim should be to employ the stitches at once in some practical construction rather than to make meaningless samplers.

Lacing and braiding can be taught in much the same way. Make mats from torn waste cloth. Crocheting of mats. Raffia lends itself well to this work, which is related to *basketry*. *String and cord work* (making knots, tackle of all kinds, connected with the building of boats, machinery, and the like) introduces a new thread: coarse cord and twine, then the finer grades, leading over to worsted, coarse linen threads, finally thin threads and silk.

The use of real needles will be preceded by the use of bodkins and darning-needles, using tape, baby-ribbon, and other ribbon. All this follows, in modern adaptation, the prehistoric development of this art.

Now *cardboard constructions* may be varied: designs in running stitch, overhanding, cross, and buttonhole stitch may be made. Make book signs, fancy baskets, mats—in silver cardboard and other fancy qualities of cardboard.

For *sewing proper* use first coarse canvas (sack and packing cloth), then rough kinds of goods, like denim, bag cloth, leading up to coarse cheesecloth, cotton and linen, silk, etc.

Make bags (laundry and sewing bags), doilies, table-covers. Introduce a large, life-size doll, for whom a trousseau may be made (the furniture to be made in the shop, to a scale), including all of a house outfit, like bedding, bedclothes, mats, carpets, dresses, underwear, etc. First use the simplest and coarsest stitches and the simplest patterns. Even bone needles may be employed in the beginning, reproducing the experiences of the women

of the Stone Age. Lead up to more elaborate forms. Make all patterns first in paper.

Dress dolls (smaller size) as Indians, Eskimos, and other nationalities or representatives of different occupations, illustrative of the work in geography, history, shop-work, etc.

Simple embroidery may be applied to these clothes and outfits, first in running stitch, later even in raised designs.

The pupils should learn to *keep their own clothes in order*, sewing on buttons, darning stockings, learning how to mend and clean their clothes; also how to collect their laundry, how to wash, to iron, to fold, and to put away. This connects with the household work.

Huck and Drawn Work on a large scale may be introduced. Also the making and trimming of simple straw hats (millinery).

Domestic Work.—Here, again, it would be prejudicial to make a distinction between boys and girls, on principle. Household managers and cooks (chefs) are just as often males as females, speaking vocationally.

First take the children all over the house and give them a systematic idea of what a house and a household is, and what a household requires. To many this will be a revelation.

The different departments of housekeeping: Cleaning, cooking, marketing, laundry, care of linen, mending, etc. Household accounts are fitly connected with arithmetic. (Model storekeeping.)

Then begin with an imaginary empty house; or take them to a newly built unfurnished house, perhaps one of their own building.

Assign the different functions to the different rooms:

Living-room, reception-room, library, bedrooms, bath and toilet, kitchen, pantry, laundry, cellar, boiler-room, garret, etc. Discuss the different sets of furnishings for these rooms so that they may serve their respective functions. Make scrap-books of furniture pictures (from magazine and other advertisements) and arrange the pictures by rooms. Add wall and floor coverings, pictures, curtains, etc. Excursions to furniture stores and factories.

Bring out the idea of suitableness of furnishings for these rooms, and the beauty and fitness of each piece. Practical and impractical furnishings. Harmonious and inharmonious effects. Water-supply, heat-supply, plants serving these purposes, fuel, stoves, furnaces, fireplaces, chimneys. Old methods of house appointments. (Cf. "Home Life in Colonial Days," by Alice Morse Earle.)

Different Types of Houses.—Huts, log houses, cottages, bungalows, farmhouses, city houses, one and two family houses, apartment and flat houses, hotels, institutions, public buildings, churches. Primitive dwellings. Houses in foreign lands. Streets, squares, city systems. Country houses and grounds surrounding them. Building material: wood, stone, brick, concrete; where to be obtained, how made, how transported. Connection with shop-work.

Keeping the House in Order.—Cleaning, sweeping, washing of floors, scrubbing, dusting, cleaning windows, etc.

Give idea of work involved, amount of it, time and energy it takes. Have each pupil clean one room, giving as many activities as possible; then count the number of rooms cleaned to find the time needed for the entire operation. Eventually repair-work in connection

with shop—painting, tightening screws, resetting window-panes, and the like. Have each child take care of his or her own room, making the bed, keeping washing materials (bowls, pitchers) in order, keeping tab of soap, towels; hanging pictures, curtains.

Laundry.—Collecting wash, soiled and clean. Folding it up properly and putting it away. The beauty of order: "A place for everything and everything in its place." Practice in washing, mangling, and ironing, also in mending. Dolls' clothes; their own clothes.

Kitchen.—Care of stove and dishes. What constitutes a set of dishes. Kitchen outfit in detail. Menus. Marketing. Cost of meals, economy. Using left-over materials in new form so as to avoid waste. Variety of menus, also for different seasons. Reason of mixed diet. Sources of supply (connect with geography and nature). To the maturer pupils some idea may be given of the chemistry of food and digestion; simple dietary and physiological instruction may be given even to younger children.

Have children observe how meals are prepared and have them help in getting things ready: peeling potatoes, trimming vegetables, etc. As an introduction to systematic lessons in cookery which are given to the older pupils, the younger ones may learn to make simple salads, toast, to prepare cereals, boil potatoes, water, eggs, tea; skim milk, serve milk, make butter. They may fill the sugar-bowls, salt and pepper cellars, etc. Later they will learn to make simple dishes and to prepare simple meals, also serving special meals on trays. In the dining-hall they should learn how to set a table, how to take care of table-linen, how to wait on the table, how to clear tables and to care for cutlery, dishes, glasses.

Camping-time will serve to emphasize the lessons of a simple life.

Nature Study.¹—It is unnecessary here to elaborate a course in nature study. Only the following remarks may be inserted:

While some time is allowed for regular periods, with experiments of all kinds in the classrooms, including botany, zoology, biology, physics (models of machinery, engines, motors, pumps, etc.), and chemistry, much of the work is done outside of these periods. These periods can be used to advantage to crystallize and review what has been taken up while the children went on walks and excursions.

The children should learn to know the world about them in all its phases, at least through typical examples. Collections of plants, flowers, leaves, nuts, seeds of all kinds, stones and minerals, soils, etc., should be made in abundance. (Correlated with art-work.) The habitat of each specimen should be carefully studied. Butterflies, insects, birds, domestic and wild animals, etc., should receive attention. Pet animals. Aquaria. Terraria. The grounds about the school can be converted into a sort of botanical garden, all trees, shrubs, vines, vegetable patches, etc., being labelled.

Little time should be spent in artificial classifications and cumbersome minutiae.

The older groups are to be organized into regular working-squads to systematically cultivate the garden on a large scale, care for the orchard, grape-vines, berries, and the like; in short, they are to learn real truck-gardening and simple farming. They are expected to

¹ "The Career of the Child," chap. XI, "Nature Work as an Objective Basis."

clean up the grounds, mow the grass, make hay, trim trees, cut out underbrush, collect and cut up wood for winter use, clean horses, take care of them and hitch them up, clean and oil wagons and harness, learn to milk cows and do dairy-work, etc.

Study of Geography.¹—Make the work strictly objective. Connect with walks, excursions, and games. Stress to be laid upon having the pupils study geographical features experimentally and by direct observation. After the excursion the class lesson should be given to review and organization. This will lead to generalizations and to application to more distant localities. The study should include discussion of the various land formations, crops, industries, population, government, location with reference either to adjoining townships, counties, or States. Imaginary journeys.

The pupils reproduce land formations on the sand-table or preferably on a larger scale on the school-grounds, learning to utilize power and energy, such as water, wind, etc. Reproductions of geographical features may also be made in papier-mâché (paper-pulp), clay, or putty, with natural rocks, moss, bridges, etc., on a large table which may be used for the illustration of entire landscapes (*cf.* "History"). Mechanical railway systems (electric toys). The composition of various soils and rocks, and their geographical significance may be studied by the older children, in conjunction with nature-work.

The motions of earth, moon, sun, stars, constellations, must be observed by actual study of existing phases. Records of weather conditions can be systematically

¹ "The Career of the Child," chap. IX, "Geography as a Collective Centre."

kept. Rough maps of excursion scenery, the grounds, the neighborhood, should be frequently made.

History Study.¹—The work should never be dependent upon a text-book. It must be done by oral presentation, study of causes and sources, ever so elementary, and a proper development of the subject-matter through discussion and story. The text-book serves as a reference book and reader mainly, perhaps as a guide to the teacher. Emphasis must be laid upon the historical and geographical setting of events. The biographical and generally human element must preponderate. This may be made as objective as possible by introducing suitable historical books and novels as references; pieces of poetry (also contemporaneous), illustrative games, collections of various kinds (school museum), excursions to historical places and to museums, indoor and outdoor dramatic representations, sand-table illustrations, constructions in wood and other material (connect with manual training and geography), the use of "modelling sheets" and other cardboard-work, illustrating houses, mills, castles, etc., dressing dolls in the costumes of various lands, climes, and times, etc.

Number, Space, and Form.²—In number the work with younger children is almost exclusively oral, the text-book being seldom in the hands of the children. The development of the concept of number as precise quantity is the object to be striven for. A child must realize that the conception of quantity is different from counting. Following the lead of primitive methods of

¹ "The Career of the Child," chap. X, "History as a Collective Centre."

² "The Career of the Child," chap. VIII, "The Mathematical Evolution of the Child."

counting and computing, introduce knotted cords and beads, notched sticks, and the counting-frame (abacus) of the toy store and the Chinese. As early number-concepts are usually space-concepts, the geometrical method should be carried through all the lower groups. Lines and distances, surfaces, desk tops, windows, doors, rooms, carpet lengths, corridors, porches, roads, garden-beds, and whatever offers an opportunity for such work should be measured. Recognition of larger units, like yards and feet, are developed first; gradually smaller units may be added; finally, fractional parts. The young child should be taught to verify his number-concepts in problems, thereby also beginning to grasp concretely the important steps of mathematical processes. All mechanical processes, such as division, subtraction, multiplication, addition, fractional parts, must first be taught as concrete problems and be made abstract or automatic only after the true meaning of the process itself is clearly grasped. When difficulties arise in the presentation of new matter (as in the introduction of fractions) the cause should be ascertained. This cause may not always be found in the method employed, but often in the mental unpreparedness of the pupil. Fractions, *e. g.*, are usually introduced too early, before the child's mind is ready to handle them.

With a development of right concepts and mechanical facility the child begins to *visualize*. The individual power of ready visualization is in a measure a native gift, and has much to do with success in mastering the mechanical processes. Connected with a definite concrete experience begins the *estimating* of lengths, distances, areas. To check up and reconstruct the gradually forming precise concepts, frequent practice in veri-

fication and re-estimation is of value. All children should be taught to tell time, using the watch, the position of the sun, the sun-dial, as guides; the days of the week; the months; computing dates in the past and future; manipulating money and change, also buying and selling in definite values, using a "Model Store Outfit,"¹ or similar contrivances.

The puzzle interest can be introduced to great advantage, suiting the complexity of the puzzle to the type and maturity of the child.

Much exercise can be given in card, lotto, and domino games, number-cards, etc. Whenever possible, number-work should be connected with concepts in manual activity, nature-work, history, geography, etc. The numerical aspect leads to "precise cognition" of values.

All signs and operations should be simplified independently of the text-books. No distinction should be made between "long" and "short" division. All problems must be based on the idea of equation, and algebraic methods can be introduced at an early stage.

The study of form, area, space, etc., through geometric puzzles (anchor puzzle), geometric construction and design (in co-ordination with manual and art work) will not only be a study in itself, but offer methodical suggestion for the presentation of arithmetical problems.

Language Teaching.²—The purpose of this subject is not to impart knowledge of grammar as a logical science or mechanical information. It is to educate the child in the use of good English, orally and in writing. Em-

¹ Cf. "Model Store-Keeping Department" of the "Educational Foundations," New York.

² "The Career of the Child," chap. XII, "Language Teaching from a Child Study Point of View."

phasis upon the formal side of this subject should be laid only in so far as it is necessary to secure correct speech and enunciation, composition-writing, clearness of spoken and written language, correct spelling, and the division of words into their phonetic elements whenever advisable. In every case the child's vocabulary should be enlarged. This does not mean that mere words should be added, but that more *concepts* be developed in connection with the work in every branch of instruction. *The language-work must be utilized to work over these concepts and make them clear-cut through labeling them with their proper names*, and link them, through language expression, with previous concepts. These names, by way of conversation, constructing definite statements, debates, and compositions, are systematically added to the vocabulary.

Care must be taken in all this work not to superimpose the teacher's more or less conventionalized mode of expression. The child's own methods of self-expression can be respected, and discreetly developed, even though they would strike the teacher as crude and unconventional in the beginning. The pupils should convert their compositions into dramatic and conversational forms, eventually to such a degree that groups may present their work to other groups in school exercises.

Spelling and language puzzles can be used systematically to great advantage. Pupils may invent similar puzzles, from the samples given, of their own initiative.

Children must learn to take notes on their walks, excursions, during the lessons, etc., and proper methods of taking such notes and of expanding them into a more complete reproduction of their experiences must be systematically taught.



FIG. 46.—Dramatics: Scene from "The Sleeping Beauty."



FIG. 47.—Dramatics: Dance of the ice-bears. From "A Dream-Trip to Northern Lands."

Formal exercises are secondary. Insistence upon correct speech is mandatory in all lessons, but care must be taken not to make this insistence irksome to the pupils. Too much pedantry will repress the desire of the child to express himself freely, and *it is better to leave crude and incorrect forms of speech unchallenged than to silence the child.*

Oral and written composition¹ and letter-writing, by dictation and blackboard development, by the class and by individuals; the evolution of tabulations, schedules, paradigms, synopses, etc., for the organizing of the material studied, so that the mind of the pupils would arrange it in proper order, must be constantly emphasized in all lessons. Dictated work may be typewritten or printed² and used as reading-matter for the dictator and his group.

Reading and Literature.³—While it is necessary to cultivate loud reading for the training in proper enunciation, elocution, and modulation, and for the purpose of checking up the child's progress and precision, it must never be forgotten that *reading aloud is a separate motor activity*, and that the main purpose of learning how to read is to train the pupil in the *ability to abstract information from the printed or written page*, and to teach him how to find this information. Too much forcing of oral reading to teacher and class may tempt a timid or nervous child to stutter.

Silent reading, with subsequent reporting on what has been read, is therefore very important. The ability to

¹ "The Career of the Child," chap. XIV, "Oral and Written Composition."

² The introduction of typesetting and the printing-press is a valuable addition to the occupational work.

³ "The Career of the Child," chap. XIII, "Reading and Literature."

absorb the sense of a sentence, of a paragraph, and, in the higher groups, of a chapter, or a whole book, after rapid perusal, must be carefully developed. Pupils must acquire a sufficient vocabulary, and the skill of finding unknown words in the dictionary.

Quick recognition of words and their analysis as to component parts, so that the reading and understanding of words may be facilitated, must be carefully taught. The derivation and composition of words will therefore be a helpful method in teaching spelling. Pupils are of two different types, *visual* and *aural*; each type requires a method of learning and spelling words commensurate to its apperceptive faculty.

Spelling has the purpose to help in the *formation of the word-form concept*, and to enable a person *to write a word correctly*, so that the reader may recognize it. Copying and writing certain words frequently in proper sentence setting will do more than mere oral drill. It is a common observation that pupils, in learning a foreign language, have little difficulty in mastering the spelling of the foreign words. This gives a most helpful suggestion in the matter of teaching English spelling.

CHAPTER XXVI

THE TRAINING OF TEACHERS¹

The Teacher as an Essential Factor.—Inasmuch as the teaching of exceptional, “different,” non-conforming, difficult children does not require any patent methods, but simply the application of rational methods to individual conditions, it may be said that special training for the teacher of non-conforming children is unnecessary. This is not quite true. Of course, every teacher should be so thoroughly trained that adjustment to different child types would be ingrained in his or her practice. The special difficulties of exceptional development in children, however, make it desirable that a selection should be made. There are also *differences of type among the teachers*, and some are better fitted to undertake finely discriminating work than others; some have the artist-teacher spirit, that deeper insight into child nature which puts them in almost immediate rapport with their pupils. But even the artist needs special training.

In many places in this book the teacher has been pointed out as the essential factor in approaching and appreciating differences in children. Were our teachers generally better trained in understanding child nature, there would be less failure in educational efforts.

¹“The Career of the Child,” chap. I, “Dignity and Responsibility of the Teacher’s Profession.”

The Teacher's Function.—The popular idea that teaching means merely the imparting of knowledge is very superficial, of course. True teaching means preparing a child to understand the world in terms of his own experience; placing him and his conduct in harmony with a social body, so that he may become a constructive factor in community life and avail himself of the opportunities for right living which are offered to him by his fellow men.

Teaching refers, therefore, not so much to "what" a child can be made to learn. It means to train him "how" to attack a problem placed before him. Merely to learn certain facts about arithmetic or history, depending largely upon memory for retaining this "knowledge," will prove very unreliable, and will rarely fit the child for the demands of life. Even a mentally defective child—an abnormal child—can be "taught" in this manner without gaining thereby in human efficiency.

Meaning of Education.—Education, to be vital, means that a child must learn:

First.—To absorb and interpret every-day experiences.

Second.—To organize daily experiences so that they may constitute a new apperceptive basis for further progress.

Third.—To realize and appreciate the relation of cause and effect.

Fourth.—To develop a mental perspective in which new situations may be foreshadowed to be met with ready preparedness.

Fifth.—To select the right course of action in meeting real or imagined situations.

Sixth.—To control his acts by a properly poised attitude.

Seventh.—To understand his relations to others and the reaction of his conduct upon them and their welfare.

These are some of the essential considerations to be borne in mind in planning the education of a child. To give such an education the teacher, assuming a function supplementary to the parental function, must be prepared.

The Child's Point of View.—To teach a child successfully "how" to learn implies that the teacher must first of all appreciate the child's point of view and his state of mind. Unless he can put himself in the child's place he will fail to understand his mental horizon. It will depend upon the child's mental vision what daily experiences he will absorb and how he will interpret them. The teacher must know, as far as possible, the child's apperceptive basis, his way of "taking in" a new experience, how he will connect the new with the old, so as to have an orderly knowledge. Cause and effect, especially with new experiences, are matters of the individual point of view. The young child does not learn things on the basis of logical order—to him nothing is definitely impossible or irrational; he learns from isolated experiences which he relates to each other in his own way. This question of relationship may be quite fortuitous in registering the experience-units in the child's mind. Hence the frequently twisted connections, the gross misunderstandings, often distinctly ludicrous from the adult's point of view, which crop out in a child's responses. They show the accidental combination of experiences which were registered in the child's mind at some time and which became connected in his thoughts through propinquity rather than through rational relation. Here the wise guidance of the true teacher is

needed, so that the idea of cause and effect may come to the child on a basis of correct association of ideas.

Qualitative Differences of Subjects.—Further, the teacher must realize that the different branches of instruction, as differentiated in the ordinary school courses, offer distinct and inherent qualitative problems in presentation. For this reason each will appeal differently to a child, so that he may be more ready to learn history than arithmetic, or vice versa. Again, apart from their inherent qualitative differences, the subjects may be taught by various methods. That the child may size up the situation, that he may array before his mental vision possible new situations from which he may find guidance for his further course—very different mental processes may be called into play when studying one subject than when studying another. Suppose a teacher, in teaching mathematics, would use merely mechanical, abstract drill and an appeal to memory; the pupil's progress may be completely blocked because the situations presented do not project themselves into his rational consciousness, do not articulate themselves with his apperceptive powers. Thus he will fail in arithmetic. On the other hand, nature study, lending itself more readily to concrete presentation, may appeal immediately to the child's interest, to his apperceptive powers, to his ability and desire to compare and to differentiate—and will thus promptly open up a wealth of associations, broadening the pupil's field of vision, relating facts with facts and thus allowing the child to employ facts as measures of new situations.

Native Differences of Individuals.—A recognition of these conditions will lead the open-minded teacher to the appreciation of the further fact that there are essen-

tial differences between individual pupils; that the emotional quality as well as the mental type of one child may vary considerably from that of another. The emotional quality alone is of tremendous moment in the development of the individual psyche. This very *emotional vitalization* of neutral external phenomena, mediated to the perception by the senses, is the essential force in our minds which colors our motives, shapes the relationship of our ideas, ideals, and deeds, and is the chief factor in our interpretation of life.

These differences of emotional attitude and of mental type—the latter being in a measure the result of the emotional attitude combined with the result of unevenness of growth of the mental faculties—cause one child to make rapid progress in a subject in which another will lag behind. They present perplexing problems to the teacher. When these differences in progress assume large proportions, we recognize what we have learned to call unusual or exceptional children.

It is evident that one of the first requirements in the preparation of teachers for their work is that they be trained in recognizing and valuing correctly these differences. *More than his ability to master the intricacies of a subject, or of a number of subjects, counts a teacher's ability to master the child problem, the intricacies of a child soul.* When the teachers will have learned to assume the right attitude toward this fundamental problem, there will be a surprising shrinkage in that group of school failures now stigmatized as "subnormal," "defective," "delinquent," "incorrigible," or "backward" children. We shall then learn that very many of these troublesome children are not lacking in possibilities—that it is not their fault that they fail, but the school's

which fails to reach them. After all, to solve these individual riddles, using the word "solve" in its broadest sense, is the true mission of the teacher.

Specialization in Teaching.—We are breaking away from the older, ungraded method of having one teacher teach *all* subjects. With the centralization of schools, produced on the one hand by the increased concentration of the urban population, and on the other by the merging of rural schools into district centres, there is a constantly increasing tendency on the part of teachers to select special branches of instruction, or at least special fields of application. We have the primary, grammar, and high school teachers; the teachers who confine themselves to some one or to a small group of related subjects; the teachers of music, of art, of manual training, of domestic work, etc.

This specialization has its drawbacks. It tends to narrow down the mental outlook of the student who specializes too early. The broad view of the educational problem must be the foundation. It may be suggested that specialization of a pronounced kind should be the second step in teacher training. This, however, might invite the pernicious practice, still so common, that the tyro teachers are let loose upon the tyro children, those precious blossoms of humanity which just open their petals to the sun of knowledge. Primary teaching is really a very delicate problem, worthy of the most careful specialized preparation.

It will at once become evident that much of the general subject-matter now included in teacher training will become extraneous under more intensive preparation. While this intensive preparation acts in a measure as a restriction of individual activity, it offers at the same

time a wider field for selection and better training, commensurate to the special talents and abilities of the individual teachers. For, naturally, each teacher is also an individual personality, and represents a mental type different from the "average"—if he is a teacher at all.

Review of a Suitable Curriculum.—The curriculum of a teachers' training course should include, it would seem, the following main divisions:

First: A comprehensive presentation of a classification of the various types of children, with their more or less pronounced variations. With these types the students must be confronted face to face. They must learn about the various physical and mental tests used to diagnose types. They must learn to read danger-signals. They should, however, from the start learn to understand their limitations in this field, and that they will have to co-ordinate their future work with experts in the field of medicine, psychology, and scientific pedagogy. After all, the rank and file of teachers cannot all be experts and leaders; they must understand professional discipline and modesty, without ever giving up the striving for higher perfection.

This presupposes the demand that *teaching must become a true profession*.

The study here outlined would eventually enable the student to recognize what type of children he could best train, to what type he could most forcibly appeal—whether his heart leads him to let little children come to him that he may guide them along the road of knowledge and mind-power, or whether he would wish to struggle with the problem of adolescence; whether it is the manual, the graphic, the artistic, the scientific, the scholastic mind, or whichever else that most ap-

peals to his instincts. He will naturally select the type most akin to his own. Should he choose to specialize with the unusual child, varying to a marked degree from ordinary types, he would have a clear survey of the field, its scope, his own fitness, what he would have to study, etc. So he may map out his studies to insure real efficiency.

Second: The teaching of methods will have to be essentially revised. Only too often the young teacher leaves the normal school permeated with methods of all kinds and just brimming over with the desire to try them out in his own way on the pupils given over to his care. Only too often the result is disastrous. Why?

"Method," as generally conceived, is related to the subject-matter primarily, not to the individual psyche of the child. It is more or less theoretically defended on general grounds. Thus, in learning to read and to spell, children have been subjected to the "word method," the "alphabetic method," the "phonetic method," the "phonogram method," and a host of others. One teacher recommends the one as the only salvation of the child, another is enthusiastic over another. In reality the success depends upon the response of the child, which in its turn depends upon the type of child mind appealed to. It is a matter of selecting the proper method, not only for a particular group of children, but for individuals within the group. In the same class several different methods may have to be used alongside of each other, or superseding one another, to reach out to all.

Again, a method depends for success much upon the person who employs it. It is to a considerable degree the expression of the teacher's own personality. One

teacher may make a certain method work with almost any class of children, when another will fail utterly. Young teachers make the mistake of following the lead of their normal school teachers too slavishly. They must first learn what *they* themselves can do with a method, how they can project themselves into the souls of their pupils. The personal equation plays an important part.

"Methods" can only serve as a working basis in training a child, a sort of reserve fund from which to draw from time to time to meet new situations.

Third: The subject of educational psychology needs revision to be of value to the practical teacher. As it is taught in our training schools it hardly helps the teacher materially in his professional work. A great deal is included because sanctioned by tradition, or is retained in the curriculum because of a general idea that it has, or ought to have, a general value in one way or another for the teacher. Just what this value is has not been accurately ascertained by psychological analysis. While other subjects have been thus analyzed, psychology itself has not applied its own method to itself. Hence, the whole subject is encumbered by a mass of material lacking in direct bearing on classroom experience; it is presented without a clear conception of the relation of educational psychology as a subject, to psychology as an important phase of educational principles. To illustrate: Knowing what mental imagery is and how it develops is one thing; recognizing mental imagery as it unfolds in an actual child's mind, understanding that child's personality, and then applying psychologically the best methods to develop that imagery rationally is an entirely different thing.

Educational psychology must be so taught that it drives home to the teacher the need and method to find the child's point of view, to experience the child's state of mind. It must lead to an understanding of the psychologic significance of the different school subjects, and of the causes of their differences; and also to an understanding of the causes of differences of individual minds. Of course psychology cannot be taught from text-books alone. It must be vitalized by taking the student right into the labyrinth of practical child problems, not only in the schools but in the homes, the streets, the courts, etc.

Fourth: The student teachers should therefore be given ample opportunity of practical experience with children. Not only in the schoolroom, with "practice teaching," but as school visitors, social workers, in the larger life of the community. Before a teacher undertakes to "teach" a child he should understand the souls and conditions of children, he should study the many pathetic problems of child life. And let him not deceive himself that this pathos is to be found only among the lowly and the outcast; it casts a shadow over many a child of the wealthy and mighty. There are sad child faces, wicked child faces, debauched child faces in the palaces as in the hovels.

Compared with the problems of this practical child psychology, the problems of subjects and methods will seem almost insignificant.

Fifth: The student should receive a broad training in physiology and hygiene. Even the ordinary class teacher should be able to recognize patent physical and psychic disorders, so that he may co-operate intelligently with the school nurses, medical inspectors, and

specialists of different kinds. A knowledge of physical and mental hygiene and the elements of medicine would also help him to realize the effect of his teaching upon the physical and mental life of the pupils. Only too frequently there is an artificial production of exceptional development going on right under the teacher's eyes, caused by him, yet entirely unobserved and ununderstood by him. The teacher must learn to assume the "medical attitude" in looking for causes and in the endeavor to diagnose.

These are some of the main points where teacher training needs to be lifted out of tradition upon a new and higher plane of efficiency. It goes without saying that there must be a course in the history of education, as a history of human ideals; a careful training in the subject-matter of knowledge and occupations, etc.

Training of Teachers for Exceptional Children.—To specialize in the education of exceptional children is a delicate problem. Of course, there are again many subdivisions of this training. These subdivisions have so far been as little recognized as have been the divisions of the exceptional children themselves. The term has been, as was shown before, indiscriminately applied to "defective" children, with a great confusion of terms, employing such words as "subnormal," "abnormal," "backward," and a host of others interchangeably and vaguely.

The teacher of the blind needs a special training different from the kind the teacher of the deaf requires. The atypical child is a very different problem from the child of arrested development, or the feeble-minded child. The retarded child needs different treatment from the child who is exceptionally bright. The psychopathic

child must be placed under a regimen which would be entirely out of place for the dull and unresponsive.

It is clear, then, that teachers' training courses must be adapted to these various needs; and that again the personality of the teachers themselves, differing in temperament and attitudes, must be determinative in the choice of the special field of work.

Many of the courses offered in universities, colleges, and similar institutions in recent years for the training of special teachers of this kind have been undifferentiated and lacking in perspective. The only courses which deserve to be called specific are those which have been given in several of the institutions for the feeble-minded. Yet even these have suffered from two grave errors—one being that they were too short to afford thoroughgoing training; the other that they were advertised and utilized for the training of teachers of ungraded classes and of "experts" in testing children, when in the very nature of their organization they could be nothing more than courses for acquainting teachers with the problem of the feeble-minded.

CHAPTER XXVII

CONCLUSION

This book has covered a large field. Naturally it cannot be expected that it has treated every detail exhaustively. But the author hopes that he has stated the problem in its completeness, and that he has given its perspective clearly and unmistakably.

In the *first part* the author attempted to state the nature of the problem, and to portray, somewhat in detail, the different kinds of the human material which makes up this civilization of ours. It must have become evident to the careful reader that the problem of the exceptional child, as here presented, is really a problem of civilization itself—that it goes to the very root of the tree of human life; that upon its solution depends the progress, yea the very existence of the race. If it is not solved in a sane and constructive manner our present civilization will be swept away as other civilizations have perished in the past, to give way to new, raw attempts, by untried races, to build up a better human society than there was before. The dreams of perfection, of salvation, of the millennium, such as are in the minds of our religious enthusiasts and philosophers, may never come true. Yet, if there is to be at any time “a new heaven and a new earth, when all men will speak a pure language, and no one will hurt another any more, and no one will wrong another any more,” we certainly must first give full opportunity for each individual to

be himself, to live up to the potentials which God has planted in his soul, so that he can be true to himself.

"To thine own self be true,
And it must follow, as the night the day,
Thou canst not then be false to any man."

In other words, more practically speaking, we must recognize and cherish variations of the human type, acknowledging in them the very safeguards and guarantees of progress and higher culture.

The *second part* discusses and describes methods of diagnosis. In detail the suggestions made by the author in this part may be open to criticism and revision. Of the need of further correction of details, of rearticulation of parts, of greater precision and condensation, or, on the other hand, of expansion, no one is more fully convinced than the author himself. This need impresses itself upon him with every new application of his own method of testing. But every new application strengthens his conviction that the *principles* upon which he bases his suggestions are essentially correct. *It can only be through the co-operation of many workers in this field, through intelligent and harmonious collaboration of experiences, through willingness to share and exchange in fair measure the success which every individual effort may achieve, that a final form will be created, out of the multifariousness of forms now offered for experiment.*

The *third part* is intended to elucidate the bearing these facts have upon active constructive work for the betterment of the race. We discussed eugenic problems and problems of the home; questions of school reorganization and social adjustment. It was discovered that the old adage, "Mens sana in corpore sano," had as-

sumed a new significance, and that the problems under discussion were in a large measure medical problems, problems of mental health through physical health.

The author's demand that there must be adjustment to individual types and interests must not be misconstrued. This demand is far from placing the child at the mercy of passing impulses and passions, fashions and whims. It does not imply a "cult of flabbiness" as the mistaken yielding to the line of the least resistance has recently been called. Quite the contrary. The healthy instincts of the child are not flabby. They are impulses for strenuous action. As soon as the baby feels the strength of his muscles and nerves, he wants to exercise his young limbs to the utmost; he wants to sit up, to stand up, to walk, even when his timid mother is yet afraid of trusting the weight of her precious to his little feet. The author knows a very little boy who has never wanted to walk on the easy path. He, living on a mountain top, has ever since he began to walk selected the roughest places to climb up, the rockiest trails to exercise his little legs and his sense of balance, and has forever spurned assistance, unless it was absolutely needed. And in all other pursuits he does likewise, always looking for difficulties to overcome, always exercising his patience as well as his skill to master a task which he has set before himself.

A child who is lazy, who looks for the easy things of life, is either spoiled by misdirected education, or a subject of medical and psychopathic examination.

The author is thoroughly imbued with the spirit of Kantian philosophy, in its educational aspect. Kant, the sage of Königsberg, pronounced the "categorical imperative," meaning *duty* as the supreme rule of life,

as the pivotal point around which life's activities must revolve. The joy of hard work, of self-sacrifice, of the devotion of the individual to unremitting service in the interest of the commonwealth, is characteristic of this idea. It is a modern form of Stoic philosophy, or, if you will, of Spartan ideals of efficiency.

He would therefore be the last one to advocate the cultivation of effeminate and self-gratifying habits in the young. But he is likewise convinced that only that individual will make his best efforts for service who can be himself—who is allowed to follow the lead of his natural genius.

APPENDICES

APPENDIX I

THE CITY AND HER BOYS¹

Classification.—For the purpose of discussing the city and her boys let us make a broad classification. It has been estimated that there are 500,000 boys in New York between the ages of seven and sixteen, and these boys may be roughly classified for our purposes into the following groups:

- (1) The boys of wealth;
- (2) The boys of the middle class, with full-functioning homes;
- (3) The boys of the semi-functioning homes;
- (4) The homeless boys.

The *first group* contains those boys who are amply protected by families of established reputation. The *second group* is the largest, that of boys who are fairly well-to-do, whose fathers work while the mothers care for the home. The boys of this class usually enter high school and secure their recreation through the Y. M. C. A., Scout movements, and similar organizations. This group is well provided with recreation as compared with Groups 3 and 4. The *third group* contains those boys that may have to work to help support the home. The mother frequently is required to work outside of the home, thus leaving the boy to the street. *It is this group that furnishes the majority of delinquents and truants.* The boys from this group live primarily in the congested districts where parental control is insufficient. The *fourth group* are the boys without a home, the occupants of our lodging-houses and institutions.* A great many boys in this group are transients.

This classification is as inaccurate as any classification of human beings.

¹ This section has been contributed by Mr. *Albert B. Hines*, Director of Madison Square Boys' Club; Member of Bureau of Municipal Research assigned to social work in connection with wayward boys.

The City's Duty Toward the Boy Problem.—What is the duty of the official city as constituted by the State to the boy problem? The value of the city lies not in her property, her courts, her railroad facilities, her location, but in her citizens. The city has her department for the protection of health, public safety, fire, parks, courts, and so on. Why should she not have a department for the protection of her children? It might be called a *Child Welfare Department*, and its duties would be to see that all the available facilities possessed by the city for children's work should be used to their highest efficiency. When we realize that at the present time only 5 per cent of the boys are given suitable recreation, and when we further understand what John Collier has said: "Juvenile crime is a play problem—not only in the sense that play is an alternative to crime, a cure for crime; but in a more specific sense, namely: in the streets of New York under present conditions play is crime and crime is play"—we shall approach the solution of the problem intelligently.

There are streets, open places, parks, buildings, various city departments, recreation centres, pools, libraries, and many other city-owned properties that might be put to use in the interest of the children. The cost of such a bureau as suggested would soon be returned to the city. The boy problem is a city problem; the city's wealth consists in her human assets, and it is within the city's power, since she has the means to make this human asset what she will. The city has shown the parental attitude when the child has broken her law—why should she not go further and show this parental attitude to the child for the purpose of preventing it from breaking the law? The city of Toronto, Canada, has recently taken over a number of private boys' clubs which she will manage as part of her city business. This social spirit of civic responsibility has grown rapidly in the last few years, and we may expect more cities to assume responsibility for their children.

Street Life.—As the Spartans used Mount Taygetus as a place to test their children by exposure, we use the streets of our city to-day, and without a doubt the streets offer the more severe test. Ninety-five per cent of the modern children are exposed to the hardships and dangers, physically as well as morally, of our American cities. It is remarkable that only 12,000

of the 350,000 that are turned out upon the streets by the schools, come into an open break with the law.

John Collier says that "play is the way of life to the child. It is his means of growth, his motive for study and work, his greatest asset. New York City has made play a child's pitfall. Child crime in New York City is built on play. Juvenile crime is increasing more rapidly than adult crime. A child crime begins with the attempt to play on the streets in violation of the law, and in forbidden places under conditions of trespassing."

These 350,000 children who represent perhaps only one-half of the children under sixteen years of age who use the streets, have the tremendous leisure time of two million hours on the average day to be spent in "street-land." Justice Hoyt of the New York Children's Court says: "We, who have actual experience in dealing with juvenile delinquency, are constantly impressed with the fact that much of our work would be unnecessary if the boy had the proper environment and leadership during his leisure time."

This "street-land" is so attractive that 10,000 children have become chronic truants. Many of the studies that have been made about the cause of juvenile delinquency lay great stress upon truancy.

A recent survey of street life (as regards play) made by the People's Institute in New York, with the assistance of 400 social workers, gives an excellent picture of the means adopted by the children to spend their leisure time. The children try to engage in wholesome play which to the city or the community is a nuisance, but which to the child is his very life. There has grown up a feeling of intolerance toward the activities of children when they interfere with the community life.

This survey observed 119,987 children, of whom 65,000 were boys, and 22,000 of these were engaged in games or occupations that lie on the border-land of the law. Two thousand of these boys were playing games that were actually violations of the law. Thirty-seven thousand of these children were simply idling, ready to be moved by any suggestion. One of the constant dangers of the child in the city are the adult individuals seeking recruits for various forms of evil. There were 30,000 adults watching these children at play, a tremendous number when we consider that to every four children at play there was

one adult who was unoccupied and interested in what these children were doing.

The street trades that boys engage in are a constant problem to the police. There were 6,000 children absorbed in some form of street trading such as peddling, selling papers, soliciting baggage, and various other trade activities. Philip Davis, in his recent comprehensive study of street life throughout the United States, puts into the mouths of these young street workers the following appeal:

Friends, you have permitted me in youth to squander my resources, instead of conserving them. You have encouraged me to sell papers and shine shoes since I was but a child. You have tipped me liberally, meaning to be good to me. In the meantime I grew up without a trade and now I am at the end of a blind alley. I am not as energetic as I was. My parents have long disowned me. I can't make a living. I have therefore come to the conclusion that the World owes me a living.

The Law.—The extreme congestion of the city makes the law and the boy natural enemies. The law as it appeals to the boy is a prohibition of many actions which are but normal to him. What may be an infraction of the law in one locality may not be in another. The perfect natural play of the country boy would be an offense in the city.

The policeman impresses the boy as a blue giant in brass buttons who belongs to the land of "Thou shalt not." But this idea of the policeman is being rapidly changed through the efforts of persons who believe that the policeman ought to be more than an "arresting officer"; that he should be a social worker, a "big brother" of all the "kids" in his block. *The juvenile delinquent is not so much a police problem as a problem of education.* The purpose of the children's courts is not to treat the boy as a criminal but rather to act in the rôle of a physician who is administering to the needs of his patients. The tendency is now for the parents to bring their incorrigible children to the court. The judge acts toward these children as a foster-parent.

The policeman is the biggest factor in juvenile delinquency, as he brings to the court 73 per cent of the cases. Shall his interest stop when he delivers the boy to the Gerry Society, or shall it stop when the boy is placed on probation? His police

interest should stop with the arrest, but his social interest should continue as long as he is brought in touch with the boy. The probation officer should use the policeman as one of the agencies which he uses in treating a particular boy for delinquency.

After the policeman leaves his charge in the hands of the court, the boy is in control of those who will bring to bear on him all the forces of rehabilitation. The idea of punishment is not paramount in the court's treatment of a case. The atmosphere is wholesome as compared with that of the criminal courts. Yet there is an element entering into the court which is dangerous to the boy, namely the intimate association he has with boys who are adult to him, and much more experienced in wrongdoing. There was remanded recently to the Gerry Society for one week a boy arrested for a minor offense. While he was detained by the Society he learned a good deal about things that are wrong which he did not know before. There was another case of a boy who was placed in P. S. 120 for truancy, who, while in this school, met boys from whom he learned to steal. While the offense for which he was sent to the school was truancy only, and not stealing, he has since been arrested three times for more serious offenses.

Probation has been to many boys a means of return to a normal life. The probation officer, considering the vast field he is forced to cover, does extremely efficient work with the boys. The officers have been able to develop considerable co-operation of various agencies in their work with the children. The *Big Brother* and the *Big Sister* movement has been of great assistance to the officers in the development of moral character in the probationers.

Mr. George Everson of the Criminal Courts Committee, in his examination of the court record, shows that *57 per cent of the boys placed on probation are retarded in school*. Where the boys have been examined, a high percentage of mental "kinks" have been discovered. A percentage of them may be truly defective, some even needing custodial care; others merely requiring the right environment and stimulus to overcome their defects. Their very retardation is very often the direct effect of unfavorable life conditions. Three boys who escaped detection by the court were recently examined and found to be so defective mentally that they were a menace to society. Many

are merely sufferers from physical defects which affect their emotional and mental equilibrium. Before a delinquent can receive full justice from the court, it is necessary that a mental and physical diagnosis be made to discover whether the cause of his trouble arises in his mind or in his body.¹

If the court is to be completely efficient in dealing with juvenile delinquency, it must not only pass sentence but must take an aggressive part in eliminating from the city life those elements that cause delinquency in the normal boy, and it must be instrumental in placing at the disposal of the boy all the agencies he needs to make him a completely socialized individual.

Recreation.—It is through the efforts of boys to have a good time that they frequently get into trouble. The facilities for recreation, both private and public, are wholly inadequate to meet the demand. It is this lack of wholesome recreational facilities that makes the boy problem such a difficult one to solve.

New York furnishes to its 500,000 boys only one hundred and twenty-nine acres of play space within walking distance of their homes. The parks owned by the city are so situated that they are not usable without a ten or twenty cent carfare—for the boys and girls that need them the most. They are really playgrounds for the well-to-do. Even for the lowlier dwellers in the near-by districts, the streets are much more interesting than the parks.

The nervous life of the city has entered into the *athletic activities* of the boys. The games that they are interested in must *have an element of excitement in them*. A great many of the games are patterned after adult life. One of the popular games is "Cops and Robbers." In this game one boy is set upon by a number of others and sand-bagged, then robbed, and the group is then chased by one of the boys, who takes the part of the "cop." This is a direct imitation of observed crime. The element of chance is so strong that it is well-nigh impossible to arrange baseball games during the summer without a side bet. The chance element and financial reward has become so

¹ The author of this book has recently examined a number of boys and girls at the Children's Court of New York County. His findings bear out Mr. Hines's statements in every detail.

much a part of track athletics that the word "amateur" has lost its original meaning. All this spirit has had its lowering influence upon the life of the boy. Instead of his recreation developing the idea of squareness, it has developed in him the idea to win at any cost, and his conscience is satisfied with the feeling that it is all right "if you can get away with it."

The fifty-three *settlements* in the city furnish a considerable amount of the recreation to the boys. Many of these settlements maintain gymnasias and summer camps at a nominal cost. They furnish a greater element to the recreational problem than the physical, namely, the socializing element in the group *clubs*, which are nothing more than the gangs under adult leadership. I consider this to be the supreme contribution of the settlements to the boy problem. In addition to the fifty-three settlements, New York has one hundred and twenty-three churches that maintain means such as gymnasias and club-rooms where the boys may find wholesome recreation.

The city maintains for recreation thirty-one centres which accommodate about 9,000 boys. It would go a long way toward solving the recreation problem if all the schools were thrown open in the evenings to be used as *social centres* for the children. Experiment has proved that these social centres can be to a great extent self-supporting.

Perhaps one of the largest factors in the recreation problem, outside of the street, is the *motion-pictures* place. The form of life exhibited on the screen is not the kind that the boy ought to see. The scenes which he frequently sees are reproduced in his own way, thus placing him within the clutches of the law. The boy has strong imitative and dramatic instincts which make these reproductions perfectly normal. The National Board of Censorship cannot censor pictures when there is such a wide group to consider, both for adults and the child. The motion pictures are in many cases an incentive to truancy, and also offer an excellent place for hiding while on the "hook," or for clandestine meetings of boys and girls. There has been little pretense of enforcing the age law. If the age law against children were in force, many of the picture-shows would go out of business. It might be a good thing, remembering that children are admitted to the theatres, always to have a matron present to see that the children are in no danger.

The Part of the Schools.—There is no institution that has as much opportunity of affecting the boy as the Public Schools System. It reaches 278,889 children for five hours a day, and then, for the remainder, closes its perfectly usable buildings. There are 10,000 truants a year that the school evidently does not adapt itself to. The school systems are made to fit the "normal" boy, that is to say, the conforming boy, thus handicapping the exceptional child whether he is above or below normal, or just normal with some trouble of his own.

The result of the examination of children coming before the courts shows that the boys have received good memory training, but poor training in constructive or initiative activity. The intellectual development that may come from books alone is not the one which the city boy needs; he needs experience that comes from some form of constructive and productive activity. He should not only acquire skill of hand, but it is important that he should get an idea of the elements involved in all the productive processes, namely, material, labor, and time. The boy should acquire the ability of a master workman, the *power to grasp a situation*, and the ability to see the end from the beginning. *It is the duty of the school to make thinkers of the boys.*

The obligation which the public schools owe to society does not end when they have developed thinkers, but their duty is only then completed when they have placed at the disposal of the boys their vast equipment for the full development of life opportunities. Instead of taking care of boys for five hours a day only, the school building should be open for use the remainder of the day and evening, and *particularly on holidays.*

The public schools of the city are used only 40 per cent of the time, and the churches are used only 10 per cent of the time. *The development of a boy's religious nature is absolutely essential to his life.*

The Church.—Boys without active church connection, or some other form of spiritual uplift, are pretty sure of moral tripping. The maximum age for delinquency is the same as the maximum age for the development of the religious instinct in the boy. Juvenile delinquents show no religious development. *The age at which most crime is committed falls within the period of life known as adolescence.* The boy is unstable and

at the same time independent, thus making his judgment untrustworthy. This is the period during which he needs guidance, and it is also *the most fertile period for the development of his religious life*. It is at this time that his *sex life* commences to unfold, and that the *idealistic elements* of his nature begin to assert themselves. It is the church's peculiar debt to the boy to supply him with an environment of inspired religious and social life at this particular period.

The church is a negative factor in the street boy's life. As an institution it has not adapted itself to the street boy. Its vast machinery is too unwieldy to adjust itself readily to the boy who needs it the most. New York City is dotted with churches, situated in the midst of the most intense social night-life; but yet they remain bleak and dark and unattractive in contrast to the cheery surroundings of commercialized amusements. These churches are not without equipment, and are not without attractions that are more desirable to the boy than those furnished by the street—if they were put before him in a form as enticing as the commercialized amusements.

To give the boy this religious life which is essential to his life, will require more than a sermon, more than a Sunday-school, more than a gymnasium or social service. The minister has not done his duty when the sermon is over, nor is his duty done when the church is thrown open under paid instructors for the neighborhood. His duty is done only when all these social activities are used to inculcate the *religious motive* in the boy—not the denominational religious motive of a Protestant, Catholic, or Jew, the motive which divides; but the development of the religious spirit which fosters human fellowship and brotherhood. A gymnasium, unless properly supervised, can counteract all the good work of the minister. Foul tactics are often indulged in in these gymnasia with the knowledge of the instructor. The spirit of winning at any cost leads to the unsportsmanlike practices that are so common in basket-ball especially. The gymnasium can be used by the minister to develop moral fibre in the boy which, if strongly developed, will sustain his attitude through life.

The church is responsible for the environment surrounding it. We would think the physician foolish who attempted to cure a contagious disease without changing the environment which

contains the germs. Yet we have the religious physician attempting to cure the boys of wrong-doing while they never try to remove the source of the contagion. Frequently the dark steps of the city churches serve as hang-outs for gangs with vicious activities. Sunday is the maximum day for offenses; yet the church does not attempt to get more than an hour of the boy's time during that day. How frequently have I seen boys hurry from the church service to the neighboring pool-rooms, or hustle through their dinner to attend some of the immoral Sunday afternoon dances. The church can hope to get small results when it has only one hour sandwiched in between pool-rooms and immoral dances, for the older boys, and the attractive excitements of street life for the younger ones. If we are to judge from the outward results, we must admit that the environment of a boy has a stronger influence upon him than does the inspiration of his church. If the church is to discharge the peculiar duty that falls upon it, it must give to the boy a religion which is natural to him.

The Working Boy.—The working boy needs attention perhaps more than any other normal type. There were over 100,000 working papers issued in the last two years for boys to go to work. This group forms a vital part of our commercial life, but only one-seventh of these boys have yet the guidance necessary to a correct choice of vocation. Many of these boys are the despair of the employer, and they frequently drift aimlessly from one position to another. There are so many of these working boys before the Children's Court that it is necessary to make special provision for them.

It is from this class of boys that the pool-rooms, cheap theatres, prize-fights, and burlesque shows draw their financial support. These boys may work all day at monotonous labor, but they require excitement and novelty at night. You can find a group of them at every corner, jostling and pushing around. The working boy is independent, with the desires of a man, but with the judgment peculiar to that unstable middle period of adolescence.

It is during this middle period of adolescence, during the years of fourteen to seventeen, that the boy leaves his church organization. It is the time of his life when he imperatively needs guidance and control. He needs *club life*, with all its

social and athletic activities. He should be given the opportunity of girls' society in a healthy environment. The moral conditions under which he now meets his girl friends are appalling, especially the conditions in the *dance-halls*, which are more demoralizing and degrading than even those on the street. The dance-halls have had such a tremendous effect upon the social usage that it is very nearly impossible to run clean dancing in the various public social centres. Not only does this type of boy need wholesome recreation after work, but he needs supervision while at work; for he is thrown in contact with conditions that are often immoral and a menace to his character.

The working-boy problem has been very successfully handled in such places as Fall River and Pittsfield, Mass. These industrial towns have provided large buildings with gymnasias, swimming-pools, athletics, libraries, pool-rooms, dramatics, industrial classes, amusements, and a cheery hang-out with good companions. These opportunities have been made attractive, and they are supplemented by the personal character of a strong superintendent. The success of a boy in commercial life depends upon how he spends his time between "quitting" and "bedtime." Instead of offering to her boys only the street-corners, pool-rooms, and saloons, the city should feel that it is part of her duty to provide sufficient clubs of this type, with the right supervision and personnel. The school buildings are admirably adapted to the use of the mass club.

The Unclubbed Boy.—Society has created her institutions for the "normal" boys, for they are in the majority; but she has not made sufficient provisions for the exceptional boy. It is from the non-conforming, the exceptional children, either below or above the normal, the variations, or those that have become derailed through some handicap, that the criminals are recruited. It is for the "normal" boy, the conformist, the boy of full-functioning home, that the greatest amount of money is spent. The Y. M. C. A. reaches mainly the boys from the full-functioning home class. This organization has a wonderful equipment, and an efficient organization of workers. The Boy Scout movement appeals to the boy of the middle class, to the boy who can afford equipment and the money for trips. The settlements appeal to the street boy, to the boy of the congested districts, to the boy of the semi-functioning home—but only

to the "normal" boy in these various groups. The recreation centres appeal to the street boy, to the working boy, and to the boy of the poor-functioning home.

The unclubbed boy, the unorganized boy, the homeless boy, whose home is the street, furnishes the fertile soil for crime. This type of boy has no place in the above-mentioned organizations. There are at least 100,000 boys that belong to the unclubbed group which does not fit itself into any of the above-mentioned organizations. A survey recently made in the district bounded by Fifth Avenue, East River, 29th Street, and 57th Street on the East Side of New York, gave the astounding result that only 5,000 boys and girls out of a population of 33,000 boys and girls belonged to any club in that district. This leaves 28,000 boys and girls who must find their amusement on the streets or in some form of commercialized enterprise.

There is little provision made for the "different," the retarded, the truant, the subnormal, the adventuresome, the "incorrigible," the defective and delinquent boys in the social organization. A probation officer recently asked a recreation-centre principal to take in a certain group of boys. She refused to have anything to do with these "roughnecks." The director of a settlement with a membership of a thousand boys was asked to take care of certain boys who had got into trouble. This director replied that these boys would not fit into his scheme. The director of one of the largest church-house settlements in the city, when approached in regard to some work for a group of boys who were troublesome, replied that it was not his business to handle these street boys.

The boy of this type is a very hard problem, but an important problem, because in this group there is a considerable proportion of defectives of some kind. From an intensive study of one hundred cases of delinquency, the writer is firmly convinced that the boy who is caught when the offense is committed by a gang, is frequently the one with lower mental faculties, and of course the one least at fault. The mentally defective boy is so open to suggestion that he easily becomes the tool of more capable boys and adults. The real criminality lies with the more capable. A boy recently arrested for driving a wagon was found to be such a slow thinker that he was frequently made the dupe of the other boys. In another case, two boys arrested

for trying to kiss the teacher of an ungraded class committed the offense at the suggestion of older boys. Another boy is now in the Catholic Protectory who was made the tool of adults. It is this acceptance of suggestion which makes the truly defective a danger to society.

APPENDIX II

A MEDICAL SYMPOSIUM

This section is unique in that it is composed of contributions by a number of leading specialists who are deeply interested in the subject of this book, and have honored the author with their co-operation and counsel. They represent a very much larger medical constituency; for this work has succeeded in enlisting the earnest consideration of many practitioners and specialists who have given it ever-increasing attention, and who have encouraged the author by their sympathy and good-will to follow the path he had broken.

The first contribution is by the Nestor of American medicine, Doctor Abraham Jacobi, who, however, is by no means agreed that this plan of a symposium is a good one. He writes: "I am interested in your subjects, and want you to go into their discussion *yourselves*. . . . Your book should be one man's book." Nevertheless, he gives the author's work his blessing in the following words:

Your "Tentative Classification" contains so much material, so many themes for extensive and difficult treatises, that it proves protracted studies on your part and the necessity of filling volumes even for a man whose life is filled with the special studies you have selected for your life work. . . . Feeble-mindedness, "exceptional" conditions, such as apply to you for correct education, training, etc., are subjects for medical studies, it is true; but unfortunately more objects of study than for improvement. On a few pages in my third edition (of 1903) of "Therapeutics of Infancy and Childhood," which you may have seen years ago, I have discussed the corresponding topics as concisely as I could. In my "non nocere" address before the Roman Congress of 1894 I have discussed premature ossification of the cranium and condemned operative interference. Neurological and psychiatric books treat of the medical (and surgical) aspects of such cases. Little's Disease, as you know, has been the subject of quite an extensive literature, etc.

All this shows that the anatomy and physiology of abnormal brains has interested a great many, but what interests you principally is the inability of medicine to aid you in individual cases. The causality of abnormal conditions of the kind has been studied, and in many individual cases with success. The results of such studies point to the possibility of *prevention* rather than cure. The faulty condition of the embryo and foetus should be influenced if possible. Diseases of those prenatal developments should be treated and cured. This very day syphilis of parents and grandparents is not sufficiently appreciated; accidents before and during labor may kill the new-born, or, what is more frequent, may add to the incompetency of the new creature for life. The statistics collected by Karl Pearson . . . prove that inferiority of the first-born is a frequent occurrence, etc.

It had been the author's intention to arrange the medical contributions in accordance with the classification of exceptional children which forms the basis of his discussions. But inasmuch as they are somewhat overlapping in content, this plan could not be carried out strictly. The individual contributions are printed without any but casual comment, even where the points of view expressed do not precisely coincide with the author's own convictions. The problem is too big to be a one man's problem, and although this book is intended to present more particularly the author's conception of it, he has felt that this section, at least, should be more in the nature of a forum, where various experiences and methods of approach should have a hearing. He is happy to find that the consensus of opinion, in most of the essential details, favors his own conception.

I. GENERAL PROCEDURE

By DOCTOR A. EMIL SCHMITT, New York City

The procedure which to my mind will bring best results in the study and education of the exceptional child is about as follows:

The teacher should state his or her problem regarding the individual child in question after making a comprehensive statement of the pupil's mental, moral, and physical characteristics as observed in school, throwing as much light as possible on the home surroundings and the parentage.

The physician should then obtain the history of the early

childhood, the past illnesses, and the present condition from the parents, and make a medicophysical examination of every organ and function of the body.

The accompanying history form, which was used at the Ethical Culture School of New York, is the outcome of my ten years' experience at that institution, and has proved most helpful and essential, especially when I made the examinations personally. Its only drawback, in fact, was that, most of the examinations being made by the family physicians, the standards varied so much, and the purposes of the examinations were so misunderstood that only one-third of those received were of value for my purpose as medical director of the school.

The best results are therefore obtained if the examinations are carried out by one examiner for each institution, and the higher his standards of precision and technic the more satisfactory the data. Combine this with good judgment shown in the suggestions of remediable measures, and they will be of the utmost value.

After the remediable physical defects have been corrected, a neuropsychologist should examine and give his opinion on the neuropsychological aspects of the case. There should then be a full discussion with teacher, physician, neuropsychologist, pupil, and parent attending, with a view of having parent and teacher co-operate in the subsequent development of the child according to the suggestions made by the physician and neuropsychologist, whose interest and further advice should be sought according to the requirements of the case.

ACCOMPANYING SCHEDULE

Confidential.—The information on the record will be held in the strictest confidence by the School Physician and Chairman of Executive Committee. Part I may be filled out by the parent, with or without the assistance of the family physician. Part II is to be filled out by a physician in connection with the physical examination.

PART I

To be filled out by parent.

Name of pupil.....Date.....Address.....
 Grade.....Room.....Teacher.....
 Nature of dwelling.....Age.....Birthplace.....Sex.....

FAMILY HISTORY

Name of parents: Father Mother Guardian
 Nationality " " "
 Occupation " " "
 Health of father If dead, cause Age at death . .
 Health of mother If dead, cause Age at death . .
 Number of brothers living Health No. dead Cause
 Number of sisters living Health No. dead Cause
 Order of birth of pupil

PAST HISTORY

Breastfed or bottlefed How long Sickly or strong babe
 First tooth at what age Walked at what age
 Talked at what age
 Dates of vaccination (smallpox) Any unsuccessful

Check off any of the following conditions from which pupil has suffered, and state year for each affection:

Convulsions Marasmus Rickets Anemia
 Diphtheria Complication (paralysis, etc.)
 Scarlet fever Complications of ear, heart, or kidneys
 Measles Complications of ear, lungs, or heart
 German measles Chicken-pox Whooping-cough
 Mumps Tuberculosis Typhoid
 Dysentery Meningitis Infantile paralysis
 Influenza Rheumatism Smallpox
 Trachoma Other eye conditions
 Ear diseases Mastoiditis
 Nasal affections Catarrh
 Tonsillitis Bronchitis Pneumonia
 Bronchopneumonia Pleurisy Heart affections
 Nervous conditions Hysteria Epilepsy
 St. Vitus's dance Habit spasms Neuralgias
 Headaches Skin eruptions Rupture
 Injuries Fall on head
 Operations: Adenoids Tonsils Hernia
 Appendix Mastoid Other operations
 State nature of any additional affections of
 Lungs Heart Glands
 Stomach Bowels Appendix
 Liver Kidneys Other vital organs

PRESENT CONDITION

Does pupil keep his lips apart or mouth open during day or night?
 Use of tea, coffee, stimulants

Daily quantity of cocoa meat eggs cream sweets
 Hour of going to bed Hour of rising Sleep quiet or restless
 Sleep with open windows Hours in open air
 Member of athletic club or recreation group Nature of exercise
 Lessons in music (state duration and time of day)
 Lessons in languages Dancing Theatre
 Amount of home-work

PART II

SUBJECTIVE SYMPTOMS

Present condition: General health Languor
 Appetite Mastication Digestion (sour eructations, gas,
 heaviness on stomach, nausea, vomiting) :
 Abdominal pain Constipation Diarrhoea
 Flatus Taking medicines of any kind
 Palpitation Short breath Nervous condition
 Habit spasms Fidgeting Bed-wetting

OBJECTIVE SIGNS

To be filled out by physician.

General appearance: Nutrition Stigmata
 Mouth-breathing Speech defects (due to tongue-tie, cleft palate,
 enlarged tonsils, adenoids, nasal obstruction, paralysis of speech
 muscles) :
 Tics Nervousness Co-ordination
 Pulse Blood-pressure Height Weight
 Chest expansion: At rest Inspiration Expiration
 Lymph glands Thyroid
 Condition of heart Heart, rate at rest After exertion
 Lungs Skin lesions (pediculi)
 Deformities of chest Spine Shoulders
 Abdomen Ptosis Distension
 Liver Spleen Stomach
 Hernia Genitalia (phimosis)
 Adolescence (menstruation)
 Knees Ankles Feet
 Gait Posture, standing Sitting
 Hearing (watch-tick): R L Audiometer: R L
 Condition of ears: R L
 Vision: R L Both Astigmatism: R L
 Wearing glasses (how long) When last corrected
 Condition of eyes Conjunctivæ
 Strabismus Pupils Nystagmus

Lips	Teeth (malocclusion).....
Tartar.....	Caries.....
Tongue.....	Palate.....
Tonsils.....	Pharynx.....
Nose.....	Nasopharynx.....
Hemoglobin.....	Breathing through nose.....
Urine: Spec. Gr.....	Blood-count.....
Remarks and recommendations to school physician:.....	Indican.....
.....	Albumin.....
.....	Sugar.....
.....	
.....	

NOTE.—*Cf.* this schedule with the schedules proposed in the author's book, "The Study of Individual Children."

II. PHYSICAL CAUSES OF GENERAL AND MENTAL DEFICIENCIES

By THOMAS D. WOOD, M.D., New York

Statistics of Physical Defects. A study of the physical causes of general and mental deficiencies among school children reveals facts, and leads to conclusions, which are of striking significance.

From 60 to 75 per cent of all school children possess physical defects which are potentially, if not actually, detrimental to health and general efficiency. Health in this relation is to be considered as affecting physical, mental, moral, and social well-being. Fortunately for the children, and for the nation, most of the defects are partially or completely remediable.

The statistics of these physical defects among school children vary widely according to the standards used for the examination of the children and, in part, according to the locality in which the examinations are made. It is difficult, therefore, to give a general estimate of the number of children handicapped by the various defects.¹ There are in the schools of the United States to-day something over 20,000,000 pupils. Careful study of statistics and estimation of all conditions lead to the following general estimate:

From (1½ to 2 per cent) 300,000 to 400,000 of these have organic heart-disease.

¹*Cf.* p. 9.

Probably (5 per cent) 1,000,000 at least have now, or have had, tuberculous disease of the lungs. From recent investigations it seems probable that a much larger percentage of children (perhaps 25-30 per cent) have received in some part of the body before the age of entering school the primary foci of tuberculous infection, which may serve as the sources of more or less serious tuberculous disease later.

Over (5 per cent) 1,000,000 have defective hearing.

About (25 per cent) 5,000,000 have defective vision.

About (25 per cent) 5,000,000 are suffering from malnutrition, in many cases due in part at least to one or more of the other defects enumerated.

Over (30 per cent) 6,000,000 have enlarged tonsils, adenoids, or enlarged cervical glands which need attention.

Over (50 per cent) 10,000,000 (in some schools as high as 98 per cent) have defective teeth which are potentially if not actually detrimental to health.

Several millions of the children possess each two or more of the handicapping defects.

Dental Defects.—The defects of the teeth are most numerous, and very few intelligent people even appreciate as yet the actual or possible injury to health that may result from defective teeth. Sir William Osler has said with great confidence that he believes defective teeth cause more physical deterioration among children in Great Britain than is produced by alcohol.

Country Children More Handicapped.—Comparative study of statistics of physical defects among children of city and country schools has brought to light the astonishing fact that country school children are handicapped by more physical defects than are children in city schools. All available statistics of mental defects show the same striking relationship; that is, a greater number of mentally defective children are found among rural school children than among those in city schools.

Physical Defects Interfere with Mental Development.—Careful study of the possible influence of the various physical defects upon mental health and efficiency leads to the conservative conclusion that most of these physical defects may interfere to some extent with normal mental development, and some of them may have a direct causal relation to actual mental deficiency. Comparison of statistics with professional opinions

shows a great variation in judgment regarding the extent of mental retardation caused by physical defects alone; but there is abundant ground for the belief that the influence of all the physical defects affecting childhood loom important even as compared with defective heredity in producing various forms of mental handicaps. Fortunately, most of the mental retardation or deficiency produced by physical defects alone may be cured entirely or in great part if these defects are recognized in time, and are corrected to the greatest possible degree.

Early Detection of Defects.—It must be considered, then, of the greatest importance to the race, to the nation, to the community, as well as to the individual child, that all of these defects should be detected at the earliest possible moment by a thorough and efficient method of examination, and that the community or the State should provide adequate means for correction and treatment.

Necessary Provisions.—The necessary provisions for such health care are comprehended in the following:

I. Health examination and supervision of all school children.
II. Dental examination and dental care for the teeth of all children in the schools.

III. The service of the school or district nurse to provide the practical health service and follow-up work which (it has been so clearly demonstrated in our cities) can be best accomplished by the school nurse. The work of the nurse is even more vitally important in rural than in city schools.

IV. Warm school lunches for all children in rural as well as in city schools. The indirect educational benefits of the school lunches upon the children and the homes are even more important than the immediate health improvement of the children themselves.

V. Correction of physical defects which are interfering with the health, the general development, and the progress of the children. For this remedial, preventive, and constructive health service a rational socialization of medical care is needed to insure the best attention that medical knowledge and skill can provide. Such a comprehensive health programme involves, both in country and city, community health centres, clinical facilities, medical, dental, surgical, and others, sufficient to meet the needs of the children.

VI. Co-operation of physicians, medical organizations, health boards, and social organizations in the health programme of the schools.

VII. Effective health instruction for all pupils, which shall aim decisively at the following results:

(a) Establishment of health habits and inculcation of lasting ideas and standards of wise and efficient living in pupils.

(b) Extension through the pupils' effort and influence of health conduct and care to the school, to the homes, and to the entire community.

VIII. Provision of adequate space, facilities, and supervision for wholesome motor activities—play, recreation, and games.

IX. Better-trained and better-paid teachers for the schools, who shall be adequate to meet the health problems as well as the other phases of the work of education.

Present Status of Health Service.—Measures for the adequate detection and treatment of health deficiencies are being rapidly put into use in many States of the Union. About four hundred cities in our country have some form of medical inspection of school children. The relative efficiency of the systems employed, however, varies greatly.

The rural schools are far behind the city schools in making provision for the health care of the children, just as the standards of living and of health care in rural America are decidedly inferior to-day to corresponding standards and care in our cities.

Mentally Backward and Deficient Children.—The adequate treatment of school children who are mentally backward or really mentally defective involves two different procedures: First, both classes should be freed to the fullest possible extent from all physical defects. Secondly, special educational provisions should be made for them. Those who are only backward, or were handicapped by removable physical defects, should be given all the educational advantages which their special cases require. Children, on the other hand, who possess inherent mental deficiency should be treated in special schools which should be provided in every community, whether urban or rural.

III. PRENATAL AND NATAL CAUSES OF EXCEPTIONAL DEVELOPMENT IN CHILDREN

By DOCTOR IRA S. WILE, New York City

Beginning of Life.—In general, educators begin their interests in children when they present themselves for schooling. It is undoubtedly true, however, that the incapability of children to take advantage of educational opportunities is largely dependent upon their physical health and heritage, developed by environment during the years preceding entrance into the pedagogical world. The beginning of the life of a child dates back to his conception, and must not be regarded merely as coincidental with his birth.

The brain development of children is affected by various factors so markedly that one must consider cerebral organization during intrauterine life, the natal period, in addition to the postnatal years. The actual development of the cerebral cells during intrauterine life is of maximum importance. If there is failure of cerebral cellular development or the brain cells are imperfectly developed, there will naturally result some form of mental incapacity, varying from idiocy to the moron state. The actual failure of development of cellular substance in the brain may be due to causes inherent in the germ-plasm. Gross injuries of the brain or its coverings occurring at the time of birth may interfere with mental development so as to later retard school progress.

Exceptional Development.—Exceptional development is not infrequently started during the prenatal period. The structural or functional variations are of two types during the prenatal months. They may be hereditary or germ-plasmic in origin, or they may be acquired intrauterine variations. This distinction is made because the term "congenital" is frequently applied so as to include all conditions existent at the time of birth, though part of these should be distinguished as hereditary.

During the natal period, disabilities may result incapacitating children to function normally, and requiring special forms of education. The physical and mental defects resultant therefrom may be due to infection or traumatism.

During the prenatal or natal period children may be handicapped physically through a sensory defect, a motor defect, or a cerebral defect. *Sensory defects* would include functional variations, diseases, or deformity of the special senses, as sight and hearing. *Motor defects*, interfering with the normal development of the neuromuscular system would include paralyses, amputations, and special deformities. *Cerebral defects* are represented by the *agenetic type*, in which a failure of brain-cell development occurs; the *dysgenetic form*, in which the cellular development is imperfect in form; and the *paragenetic variations*, where originally normal brain cells are vitiated in activity through superposed disease.

Heredity and Environment.—It is needless in this special discussion to dwell upon the relative importance of defects due to heredity and those occasioned by environmental maladjustments. It is probably safe to state that heredity, with its various potentialities, requires a favorable environment for its maximum evolution and most favorable developments.

Redemption of Childhood.—With the development of a social consciousness, child nurture has received a relatively more important position than during previous centuries. The disabilities due to prenatal or natal agencies no longer necessarily lead to death, or to a concealed vegetative existence. Society is seeking to redeem childhood and to preserve for itself all children, regardless of their handicaps. Life thus being retained, an obligation rests upon communities to afford the fullest opportunity to such children for the development of their physical, mental, and moral possibilities into actualities productive of good character, capable citizenship, and vital service. The limitations of children arriving at the school age merely increase the responsibilities of educational authorities to afford them every opportunity of receiving the best type of education for which each child is adapted.

Special Defects.—In a consideration of defects incidental to prenatal influences, one is immediately confronted with an exceedingly large variety of conditions interfering with normal educational development. Just as the racial factors in heredity may be determinative of the size of individuals, and as family relationship may influence physical and mental resemblances, so there may be inherent in the germ-plasm, either because of

the presence of special determiners or the absence of particular determiners, intrinsic variations which predetermine the necessity of special education. Illustrative of this, one immediately thinks of such conditions as juvenile cataract, glaucoma, and polydactylism. Similarly, a lack of special determiners may cause the development of children suffering from albinism, nyctalopia, hemophilia, deaf-mutism, cleft palate, color-blindness, imbecility, idiocy, and epilepsy. Psychoses and neuroses result from neuropathic inheritance. Migraine may develop from the same cause. On the other hand, the nervous instability may eventuate in precocity or genius. Speech defects may be inherent in hereditary factors latent in the germ-plasm, and not counterbalanced by favoring environment and training.

Racial Immunities.—From another standpoint one must consider even the inheritance of racial immunities, as, for example, the lower susceptibility of the negro to yellow fever, or compared with the negro the lower susceptibility of the whites to tuberculosis. The negro is less liable to acne, lupus, and irritation by animal parasites. Favus is more likely to occur among Italians and Hungarians. Amaurotic family idiocy is almost exclusively found among Jews.

Equally vital from the standpoint of inheritance is the relative degree of resistance or immunity to disease. Even among the skin diseases one may enumerate the inheritance of ichthyosis and psoriasis, exanthema multiplex, and predispositions to eczema. In passing, one must also recall the existence of hereditary cerebellar and hereditary spinal ataxia, particularly Friedreich's ataxia.

These various conditions all result in the birth of children physically or mentally handicapped who, if they reach the school age, require special adaptations of education in order to receive their proper development.

Other Intrauterine Anomalies.—The conditions which are prenatal though not germ-plastic in origin are due to faulty development or injuries during intrauterine life. They also present types of exceptional children who later merit special consideration. Among the numerous anomalies of development one need only think of intrauterine amputations, congenital heart-disease, cretinism, spina bifida, chondrodystrophy, dwarf-

ism, clubfeet, hydrocephalus, hernia, microtia, and congenital absence of the middle and internal ear.

Many of the speech defects, because of the intimate relation between disorders of speech with the development of the organs of speech and the cerebral centres of intelligence, are to be regarded as results of developmental anomalies. Such types of speech defects may be due, for example, to a congenital occlusion of the posterior nares, or to the shortness of the geniohyoglossus muscle, or to tongue tie.

Care of the Prospective Mother.—In order to safeguard the child during the period of prenatal life, in so far as may be possible, it is essential that the prospective mother place herself under the direction, supervision, and guidance of a physician carefully selected because of his ability. The longer the pregnant woman is under medical care, the greater is the likelihood of her escaping miscarriage, and a greater advantage appears to accrue to the unborn child. Prenatal care thus far has indicated that the mortality rate during the first month of life may be cut in half, and those disabilities not due to inherent defects of the germ-plasm decreased to a remarkable extent.

Natal Causes.—The natal causes may be infections with gonorrhea, producing the blindness of the new-born, or syphilitic infection at birth, with its later evidences of interstitial keratitis, progressive deafness, large lymph-glands, and ulcerations of the throat. There may be paralysis from blood-clots on the brain, or obstetrical paralysis, particularly those of the upper arm (Erb's paralysis) or the lower arm (Klumpke's paralysis).

The importance of excellent obstetrical and nursing care at the time of childbirth cannot be overstressed, in order to obviate diseases and deformities incident to the forces operating in childbirth, such forces being either internal or external.

Adjustment to Individual Needs.—Even this brief résumé is indicative of the large variety of conditions among children of school age that are due to prenatal or natal factors. The various conditions mentioned may be productive of various school types of exceptional children. They may be characterized by a varied group of symptoms which are discouraging to pupil, parent, and teacher in connection with educational development. The children may be nervous, irritable, restless, quiet, inattentive, sensitive, diffident, shy, self-conscious, apathetic, retiring,

hysterical, uncommunicative, headstrong, explosive, emotional, passive, vegetative, unsocial, antisocial, quick or dull in sensory or motor reactions, incapable in some special work involving a sensory or motor mechanism, suspicious, fearful, fatigued, backward, and disinterested. They may be blind, deaf, mute, with speech defect, with skin eruptions, faulty dentition, cutaneous disease, or some evident physical impairment or disability in gait or with inco-ordinate muscular movements.

It is not necessary to specify the particular physical and mental conditions arising in connection with each specific handicap. It is patent that children of all these types require special attention. Educational methods must be adjusted to individual needs. Auxiliary classes are essential so that the children from these groups may be attended to. There should be classes for the blind, the crippled, the deaf, for children with cardiac diseases, speech defects, etc.

In order to secure the maximum educational results, the curriculum must be sufficiently elastic to permit of the widest modifications, while adequate pedagogical methods must be constantly devised for the manifold needs of these no less than other classes of exceptional children. There is a wealth of socially constructive thought bound up in the fact that this handicapped element of the school population is the victim not so much of the failure of a postnatal environment as of dysgenic factors existent before or at the time of actual birth.

IV. MEDICOEDUCATIONAL METHODS IN THE TREATMENT OF ATYPICAL CHILDREN

By DOCTOR C. HUDSON-MAKUEN, Philadelphia

Medicoeducational Methods.—The term "medicoeducational" is one that is frequently used and it explains itself, but its successful application as a system of treatment depends entirely upon the judgment of the physician.

Medicoeducational methods are applicable in a measure to all classes of patients, but they are especially indicated in the treatment of so-called atypical children, and as Doctor Oliver Wendell Holmes has suggested, to be curative in every instance

they should be instituted several generations before the birth of the child.

Medicoeducational methods, therefore, have a twofold function: namely, the prevention of disease and the cure of it.

Principle of Eugenics.—The principle of eugenics has been advocated as a means of preventing disease, and but for the difficulties of establishing or enforcing the principle it would doubtless be of great value. The chief obstacle also to the successful practice of any medicoeducational methods, whether for the prevention or cure of disease, is the difficulty arising, first, in outlining a suitable course of procedure, and second, in seeing that the course is properly carried out.

The Medicoeducationalist.—To successfully meet these difficulties the medicoeducationalist must be a specialist in the true sense of the term. He must be a medical man and an educational man; he must be at once a physiologist and a psychologist, a physician and a teacher; he must know his medicine well, and he must know the workings of the human mind equally well. He must know not only what should be done for the prevention and cure of certain abnormal conditions, but he must know how to do it, and how to teach others to do it. "To do" is not as easy as "to know what to do," and the great medicoeducational problem is to make men do the things that are good for them, and leave undone the things that are not good for them.

Psychological Conditions.—Failure in the successful application of medicoeducational methods of treatment is often due to the physician's own lack of belief in them. If we would convince another of the error of his ways, we must ourselves be keenly alive to the error; and when we have once really convinced our patient of his error, we have him in the true psychological condition for the adoption of means which make for its complete eradication.

Physicians are constantly making the mistake of separating the mind from the body in their diagnosis and treatment of disease, and this is especially true in the diagnosis and treatment of diseases of childhood.

Mind and Brain.—The mind of the child is always a product or function of the child's brain, and defective mentality always suggests a defective action in some of the cerebral structures.

This defective action does not necessarily indicate organic cerebral defects, but it may be due merely and wholly to a bad start in the growth and development of the brain tissues.

A study of child psychology teaches us that of all the organs of the body the brain is the most susceptible to physical and functional development. The cerebral convolutions increase enormously in number, and the enveloping gray matter, which forms the so-called cortex of the brain, undergoes a corresponding increase in its surface growth during what we call mental development.

Moreover, the so-called associational fibres of the brain, upon which its mental functions so largely depend, are merely rudimentary in early childhood, and only attain their full functioning powers after years of growth and development.

These anatomical and physiological facts must be taken into consideration in the application of medicoeducational measures in the treatment of children. Even the normal child should be given plenty of time for physical development before any special mental development is attempted, always keeping in mind his physical and psychical limitations.

Difference Between Normality and Abnormality.—A striking difference between the mentally normal and the abnormal child appears in the fact that the one develops automatically, while the other halts in his development, or actually, in some instances, loses ground or undergoes a retrograde development.

Psychophysical Education.—The physician's aim in the treatment of all children should be to assist them in both their physical and mental development. The phrase that best expresses this work is psychophysical education, or, better still, physicopsychical education, because the physical education precedes the psychical and forms its basis.

Concentration.—It has been found that doing things with purposeful intent has a far greater educational value than doing things at random, or with no special object in view. Concentration, therefore, upon the thing in hand should always be the watchword in the psychophysical training of children, and observing a daily improvement in the child's faculty of concentration constitutes one of the greatest pleasures in connection with carrying on this work.

The physician, above all else, should be a teacher, because of

his numerous opportunities for teaching how to avoid disease as well as how to recover from disease.

Two Important Elements.—The two important things to keep in mind in the psychophysical education of children are, first: a correct postural attitude, and, second, correct breathing. These two things have been said to constitute a cardinal principle in the treatment and prevention of disease, and at all events they should form the starting-point of all medicoeducational systems of treatment. Their application in the case of normal children is comparatively simple, but in atypical or subnormal children the problem is more difficult and more complex.

Correct Postural Attitudes.—To teach correct postural attitudes requires much knowledge, patience, and skill on the part of the physician, and for the child to acquire and develop normal orthograde positions of the body requires a considerable well-directed practice on his own part.

Moreover, this practice, to be of psychical as well as physical benefit, should have a purpose in view, and it should be carried on volitionally and under the direction of the mind. Such physical exercises have a value far beyond that which is usually attributed to them, and when they can be made use of in the training of atypical or otherwise exceptional children they should not be neglected or entirely supplanted by the usual methods of manual training.

Correct Breathing.—Physicians differ widely as to just what correct breathing is, but nothing is more important in the physical development of the child than the acquirement of normal and efficient respiratory habits. Such habits, to be sure, are likely to follow naturally upon correct postural attitudes, especially in normal children. But in atypical, subnormal, and abnormal children they must be acquired, oftentimes by persistent practice, sometimes covering long periods of time.

Speech Training.—The psychophysical education, to which I have referred, should precede and accompany speech training, which should constitute an important factor in all this work, because of its close relationship to the mind of the child.

A Forcing Process.—Atypical or backward children should not be coddled but encouraged, and, like plants of slow growth, in some instances they should be "forced." This may be done by supplying favorable conditions for growth and development, and by directing their physical activities in the right channels.

Comparative ill health is not always a contraindication, but oftentimes a decided indication for this forcing process. Many a child immediately begins to improve physically as well as mentally when well-directed pressure is brought to bear upon him in psychophysical education.

It is not enough to merely lead these children, but they must, in a measure, be driven, and in this way they soon find that in the words of the country boy who went to hear Rubinstein play the piano: "It is happier to be miserable than to be happy without being miserable."

V. MALNUTRITION

By DOCTOR IRA S. WILE, New York City

Definition of Malnutrition.—Among the various problems relating to the physical health and educational welfare of public school children, none is less understood or more misunderstood than malnutrition. The statistical side of medical inspection has thus far failed to establish satisfactory or definite relations between malnutrition and specific physical defects. The term "malnutrition" has not been clearly defined, and its connotations are so numerous as to confuse the entire problem.

Hogarth has defined malnutrition as an "abnormal or disordered growth in the development of the tissues and organisms of a child's body not necessarily synonymous with under-feeding"; and he wisely states: "Malnutrition is at once the most common, and until recently the least observed of all the unrecognized diseases and affections among children attending elementary schools." From this definition it is apparent that malnutrition is not concerned with breakfastless children, but with all the children who for long periods of time are receiving at home a dietary that is not adapted to their needs, and in consequence of which there is marked physical or mental deterioration.

Extent of Malnutrition.—The extent of malnutrition has not been scientifically determined. The figures available for various communities vary according to the personal equations of the medical inspectors noting these defects. MacKenzie regards one-third of all the school children in Edinburgh as poorly nourished. Warner and Tuke found 28.5 per cent of London school children suffering from deficient feeding. Estimates of

malnutrition in New York City vary from 5 per cent to 40 per cent, with 15 per cent adjudged to be marked cases of malnutrition. In Chicago in 1908, 12 per cent, and in Boston, 1909, 16 per cent, of the children examined were reported as suffering from malnutrition. Thomas D. Wood regards 25 per cent of the school children in this country as suffering from malnutrition.

Causes of Undernourishment.—While the causes of undernourishment are exceedingly numerous and closely connected with sociological problems as housing, overcrowding, low wages, underemployment, alcoholism, poor hygiene, and ignorance of food values, it is impossible to attack these causal factors in specific instances unless malnutrition itself has been recognized. Poor assimilation, insufficient clothing, overstimulation, worry, grief, anxiety may also enter into the basic causes leading to individual states of malnutrition. It is patent that the initial step and the solution of the problem of chronic undernourishment is the determination of the existence of malnutrition.

Symptoms of Malnutrition.—The symptoms of malnutrition which are too frequently overlooked or insufficiently considered are anæmia, with various types of blood deficiencies, pallor, harsh and inelastic skins, muscular weakness with spinal curvatures, or flatfoot, carious teeth, squints, diseases of the external eye, lassitude, inattention, twitchings, backwardness, and mental dulness. The height, weight, and chest measurements are usually below par. The stunted growth, the delayed physical and mental development, the weaknesses of the muscles, the increased susceptibility to infectious diseases, and marked liability to tuberculosis may all be related to a greater or less extent to a more fundamental condition of malnutrition.

While coefficients of growth and vital capacity have been determined, they are not to be relied upon as final determinants in diagnosing malnutrition. At times valuable information may be secured by the application of Oppenheimer's formula which makes the index of nutrition equal

$$\frac{\text{Girth of the arms (midway between shoulder and elbow)}}{\text{Chest girth (average of inspiration and expiration)}}$$

This should equal at least 30.

During the early years of school life, nutrition may suffer from *educational maladjustments*. The metamorphosing years preceding puberty severely attack nutrition, and it has long been recognized that the chronically underfed or malnourished child requires a longer period of time for pubertal development than his better cared for brother or sister.

Effect of Malnutrition.—The prepondering proportion of *dental defects* should call attention to the important fact that the permanent teeth develop during the school period. There appears to be an important relation between deteriorated dentition and malnutrition.

Insufficient thought has been devoted to the effect of undernourishment during the years of life previous to school work. It is quite possible that the relative starvation in proteins, lime, iron, calcium, and magnesium during the first five years of life helps to produce the school child suffering from malnutrition.

Unfortunately, the diagnosis of malnutrition is rarely made if any other defect is present. The dependence of defects, like anæmia, adenitis, chorea, tuberculosis, visual defects, mental dulness and increased susceptibility to infections, upon malnutrition, or their interdependence, or their coincidence, is not uniformly entered into the record. In consequence, corrective measures are not applied.

Chronically underfed children are more vulnerable to contagious diseases and more susceptible to protracted colds and bronchitis. Not only are they more likely to fall victims to disease, but for the same reason their convalescence is retarded, their complications are more numerous, and their loss of education and training exceeds that of other children of the same age in a better state of nutrition.

In so far as *defects of vision* are related to malnutrition, it is obvious that the visual approach to the mind presents many obstacles to the undernourished child. Mental dulness is by no means uncommonly dependent upon a state of chronic malnutrition.

Nutrition Records.—Regardless of the primary factor in malnutrition, whether it be due to a deteriorative reaction against an oppressing physical environment or to unhygienic home conditions, or to lack of adequate or insufficient food, no child's physical record should be regarded as complete without some

notation regarding the state of his nutrition. This position is strengthened by the comment of the Chief Medical Officer of London, 1910: "It is certain that malnutrition and physical defects are closely associated, and react upon each other, but it is difficult to determine their exact relation to each child, or to say in what degree malnutrition causes the other physical evils. Merely to increase the supply of food would, in many cases, not solve the complex problem of the individual child, although in many cases lack of food lies at the root of the mischief."

Interdependence of Conditions.—The extent to which malnutrition is causative of physical defects, or the degree to which physical defects are responsible for malnutrition has not been determined. Their interdependence appears to be certain, or their coincidental occurrence may be due in part to their mutual dependence upon a series of basic factors underlying the healthful functioning of the human body.

Solution of the Problem.—The solution of the problem of malnutrition is not at hand, nor will it be until medical inspectors give greater consideration to malnutrition. Considered as a unit defect, it possesses unusual significance in a constructive programme for the establishment of the preventive and correctional methods so necessary for the protection or the conservation of school children. Considered from the standpoint of education, malnutrition is undoubtedly a factor in retardation, elimination, and mediocre, or worse, school work. The powers of attention, concentration, memory, and directive effort are undermined in children whose blood tissues are lacking in the elements necessary to normal function. There is more than a grain of truth in Bacon's statement: "The brain is in some sort in the custody of the stomach."

From the standpoint of *prevention*, the school environment with its poor air, overstrain, excitement, and attendant worry demands frequent inspection lest it serve to destroy appetite and impair digestion with a resultant deterioration in nutrition.

Special cases of malnutrition demand various treatments from the educational standpoint according to the underlying causal factors. Obviously, poverty in the home cannot be directly remedied by the school, but the institution of *school lunches* may serve to partially correct the disadvantage of the home environment. *Special classes for anæmics and open-air classes for children*

physically impaired appear to be essential in order to prevent further malnutrition or to correct nutritional defects whenever noted. The correction of physical defects interfering with digestion or calling forth unnecessary expenditures of energy are prerequisite of any systematic endeavor to remedy malnutrition.

The social disabilities effecting undernourishment may be attacked through the institution of *school nurses, home and school visitors*, or through the direct utilization of the various social and philanthropic agencies seeking to improve the welfare of families in the community.

Determination of Malnutrition.—Beyond a doubt, the first step in the solution of the problem is the actual determination of malnutrition. The potentialities of educational measures are dependent upon the state of nutrition. Nutritional deficiencies cannot be overcome until a thorough investigation has been made along modern scientific lines in order that there may be reached a uniform conception of malnutrition itself, the basic causes operating to produce it, together with such essential reconstructive measures in our educational institutions as will enable them to cope successfully with all phases of the problem.

VI. CLINICAL STUDIES AND OBSERVATIONS IN THE MOUTH OF THE EXCEPTIONAL CHILD

By ARTHUR ZENTLER, D.D.S., New York City

Oral Hygiene.—The oral hygiene movement has made such gigantic strides in the last few years, all through the entire civilized world, that it must reach out to the problem of the atypical child.

If it is at all true that it plays an important rôle in the life of the "typical" child—and who will gainsay this to-day?—then it certainly must be true that oral hygiene is doubly important in the life and redemption of the "atypical" or otherwise handicapped child.

If the lack of proper mouth conditions in any given case is not the only reason preventing the child from rising from the atypical state into the typical, from the subnormal into the normal, it certainly is an impeding factor.

In order that this be clearly understood it behooves me to

give not only a brief definition of oral hygiene, which means health of the mouth, but to explain it in its broader meaning.

Meaning of Oral Hygiene.—Oral hygiene, aside from complete asepsis of the hard and soft structures of the mouth, implies the constant keeping of each tooth individually in such condition, and all teeth collectively in such relation to each other, as to preserve *normal occlusion*, which means that when the mouth is in a state of repose all the teeth should be in such contact as to afford to each other the greatest possible support—which contact will enable their occlusal surfaces to give the greatest possible service in the act of mastication.

Pictures Nos. 48, 49, and 50 represent the casts of the same mouth where the left side is in normal occlusion, showing the contact spoken of, while the right side is thrown into mal-occlusion, because of the extraction of only one tooth, thus showing lack of contact.

How Early Should Care of Mouth Begin?—The desire to obtain the ideal conditions of normal occlusion would lead one to the natural question of how early one must begin the care of the mouth. I believe I have answered this question in my essay¹ read before the Section on Stomatology of the A. M. A. at its annual meeting of 1911, written with the purpose of pointing out that the care of the teeth of the child must begin in the mouth of the mother during pregnancy.

During infancy the foundation to well-developed jaw-bones should be breast-feeding as against bottle-feeding, the former stimulating growth through activity, while the latter does not possess this advantage. After weaning, it is essential that a diet requiring thorough mastication be observed. Mushy foods so generally used should be replaced by dry toast, not such softened by liquids; meat broths should be replaced by the actual meat given the child to chew on, of course care being taken that only the juice is swallowed, etc. This admonition as to eating such foods which need thorough mastication holds good from babyhood all through the rest of one's life.

Scrupulous cleanliness of the teeth must begin with the

¹ "Oral Development in Progeny Influenced by the Buccal Tissues During Pregnancy."

emerging of the first tooth in the baby's mouth, and be continued throughout life.

Caries.—If in spite of all care, caries make their appearance, the lost portion of a tooth must be so replaced that the original shape of the tooth is again obtained. Nothing short of this will answer the purpose of oral hygiene in its broadest sense. If any one or more teeth are lost they must be replaced, and this in such a manner as to afford to the adjoining and opposing teeth that contact of which I spoke in the beginning.

Wrong Alignment.—If from prenatal or postnatal causes the jaw-bones have failed to develop normally, and thereby teeth emerge or shift into wrong alignment, the cause for lack of jaw development must be ascertained, removed if possible, and nature aided through artificial stimulation to properly develop the jaw-bones, *i. e.*, if indications for future narrow dental arches are present appliances should be anchored on the teeth as early as their shape will allow it, for the purpose of expanding the jaw, etc.

Other Pathologic Manifestations.—Pathologic manifestations of less ordinary occurrence such as cleft palate, harelip, etc., must of course be attended to in earliest infancy.

If, however, for one or another reason, proper mouth conditions do not exist, the child so afflicted will show the evil sequelæ in a more or less marked degree. This will be in proportion to the seriousness of the defects, although even minor defects have their influence as well upon the physical as upon the mental status of the child.

The Mouth as a Cause of Retardation.—It will, therefore, be easy to understand that even where the general clinical history points to negative findings, a thorough examination of the mouth may contribute to the discovering of the reason of a retarded mental development, as, for instance, in the following case:

The casts of the mouth of C. G., **Case 77**, 26 years old (Figs. 51 and 52), whose clinical history runs as follows: Male, only child, no hereditary traits reported, deficient animation at birth, some convulsions during teething, had diphtheria at 1, language developed slowly, walked and talked at 3, had measles at 9, tonsils removed at 10, is undersized and heavy, and mental development at present is like that of a child of 12 or 13.

When one considers that among all the evil effects resulting

from the abnormal condition found in the mouth of *C. G.*, such as poor assimilation due to improper mastication, etc., improper oxygenation due to faulty respiration, the cause of the retarded mental development may readily be traced to a brain lacking a sufficient supply of well-oxygenated blood. Who may say that if *C. G.*, who to-day clearly belongs to the defective class, due to pathologically retarded development, would have obtained, in early childhood, the needed care resulting in the establishment of proper mouth conditions, his mental development would not be a much simpler problem than it now is?

Whether in a condition as aggravated as his, and at an age as advanced as his, great beneficial results could be derived from remedying, to such an extent as would be possible, his oral defects, is not altogether certain. But from past experiences the attempt is warranted.

In another case, the one of *D. T.*, **Case 65**, 18 years old (Figs. 53 and 54), male, there are perhaps prenatal causes working along with the postnatal causes. The one important factor always assisting normal jaw-bone development—I refer to breast-feeding—being reported positive in *D. T.*'s clinical history, the underdeveloped maxilla and mandible can be accounted for either as an inheritance, or as the result of prolonged existence of adenoids and enlarged tonsils. These were not removed until the age of 10, which means that mouth breathing was allowed to interfere with proper respiration during the period of jaw-bone growth.

Mouth Breathing.—Breathing through the mouth instead of through the nose changes the normal action of the muscles controlling the position of the lips, and changes the position of the tongue, which, when the mouth is in repose, in normal breathing, rests flat against the roof of the mouth, thereby contributing mechanically to a lateral development of the maxillary bones. When in breathing the mouth is kept open, instead of closed, as it should be, the upper lip is drawn upward, depressing the subnasal anterior portion of the maxillary bones, contributing to underdevelopment of these parts, which accounts for the original crowded condition of the upper anterior teeth of *D. T.*

The unfortunate remedy resorted to, in this case, in the desire to cope with this condition, namely, the extraction of the right and left upper cuspids, presumably for the purpose of

FIG. 48A



FIG. 40.



FIG. 51.

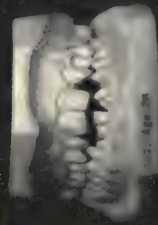


FIG. 53.

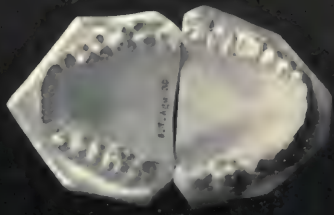
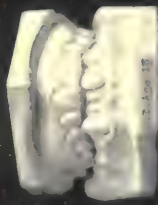


FIG. 50.

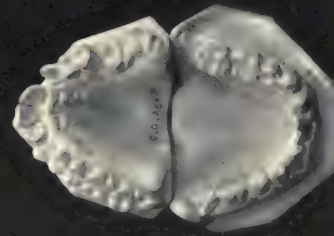


FIG. 52.

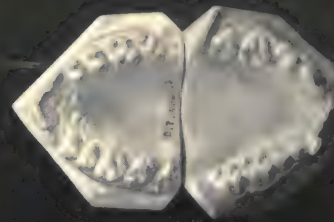


FIG. 54.

making room, has resulted in further narrowing of the upper arch and in further crowding of the lower teeth, in a mandible already much underdeveloped.

It would be indeed interesting to see to what extent the expanding of both the maxilla and mandible would improve *D. T.*'s mental faculties, as undoubtedly the remedying of these conditions will have as immediate result the bettering of the brain pabulum quality.

Bottle-Feeding.—In *D. L.*'s case, **Case 78**, 14 years old, male (Figs. 55 and 56), the general clinical history reports alongside of similar causes, as in the previous case, the one other most important factor responsible for lack of jaw development—I am now referring to bottle-feeding—which was inflicted upon this child for two years.

The maxillary protrusion, the complete lack of anterior occlusion, and the faulty posterior occlusion might have all been prevented if adenoids and tonsils had been removed in their incipency. They were removed after the completion of the jaw-bone development. In addition to the enumerated defects from underdevelopment, defects from sheer negligence have operated their evil sequelæ in *D. L.*'s mouth. Caries were allowed to destroy almost to the roots two of the four most important teeth in the mouth, the first permanent molars. The reported premature extraction of deciduous teeth had its share in causing the crowded condition of the permanent teeth in his mouth.

With all these causes present, interfering on one hand with proper mastication, on the other with proper respiration, is it surprising that underweight is reported, that the general physical condition is stated as poor; and would it be surprising that in giving due attention to *D. L.*'s teeth and correcting his malocclusion, a bettering of his physical condition would be obtained, and will this not materially contribute to raise *D. L.*'s mental status?

Other Cases.—The casts of *E. K.*, **Case 79**, age 14, female (Figs. 57 and 58), show again every indication corroborating the facts pointed out in the cases enumerated above.

There are, in the general history of this case, prenatal as well as postnatal findings reported. The maternal grandmother had pulmonary tuberculosis, the mother is reported as a very

nervous woman, and *E. K.* herself has had her troubles from birth on, almost all through her life, but was fortunate in benefiting by one advantage, breast-feeding; and were it not that adenoids and tonsils were allowed to interfere with her nasal respiration, she might have developed normal jaw-bones. As it is, she has a pronounced maxillary protrusion, both the maxilla and mandible being constricted and needing expansion.

I need not repeat that on account of the condition caused by leaving adenoids and tonsils undisturbed until the age of 13, the advantage for jaw-bone development gained through breast-feeding was entirely lost, mouth breathing taking place.

For more than one reason, *E. K.* rightly belongs in the atypical class, and it can only be said that hers is another case where an improperly nourished brain, due partly to improper breathing, contributes to the difficulty of solving the problem of this exceptional child.

In *H. H.*, Case 80, 9 years old, female (Figs. 59 and 60), is found marked corroboration of the contention that early removal of adenoids checks the nefarious influence which their existence has upon jaw-bone development. Her clinical history reports that beginning with the initial handicap, bottle-feeding, she goes through whooping-cough, measles, is twice left listless and feverish for three days from falling; had inco-ordination of posture and gait, walking sometimes on hands and knees up and down stairs; digestion is retarded; has bad fits of temper, throwing herself on the floor, kicking and screaming; is gaining poorly in weight, and her heart does not seem strong. With all this, *H. H.* is reported to be bright in school work, and rather beyond her age in school accomplishments.

When, as in this case, the clinical history points to such positive findings of serious nervous disturbances which naturally would interfere with general development, and in spite of it the jaw-bones have developed almost normally, seeing that the mesio-distal relation of the first permanent molars is normal, and only a slight tendency to maxillary protrusion is present, what accounts for it? The bottle-feeding has worked its initial evil influence resulting in this just-mentioned slight maxillary protrusion, but this has not progressed very far, the mouth breathing resulting from adenoids having been checked through their early removal, once at the age of 4, and again at the age of 5.

FIG. 55.



FIG. 57.



FIG. 59.

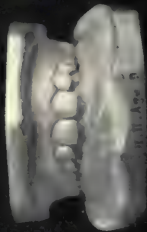


FIG. 61.

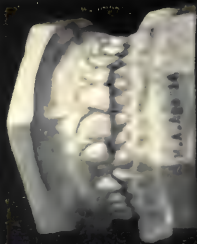


FIG. 56.

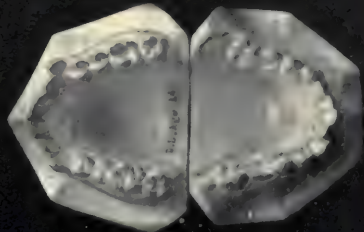


FIG. 58.

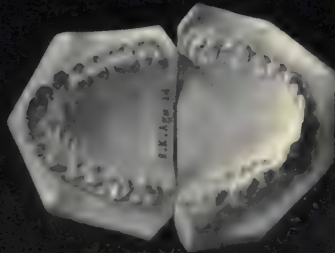


FIG. 60.

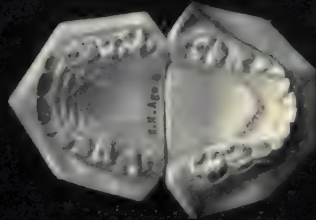
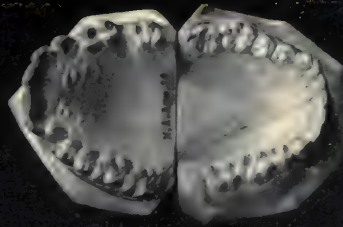


FIG. 62.



Perhaps a still earlier removal of the adenoids would have shown its beneficial effects in a still slighter progress of the maxillary protrusion. However, the condition obtained was sufficient to allow a proper respiration, and does it not seem as if, this having contributed to a flow of well-oxygenated blood-supply to the brain, it has kept the mental faculties of *H. H.* above her physical status? Does it not appear clearly that a better respiration was obtained through checking the progress of the maxillary protrusion and its consequences?

Again, in this same case, are found several decayed teeth, and some inadequately filled teeth. And again, the clinical history reports: "Digestion was normal, but recently is retarded and seems to point to fecal poisoning, which may be at the bottom of much of her seemingly nervous trouble." It is quite likely that the digestion was normal, and that with the progress of the decaying of her teeth, to the extent that proper mastication is interfered with, the digestion suffers, and if this be the direct cause of her "nervous troubles," may they not be remedied by giving due attention to her teeth, re-establishing thereby proper mastication and normal digestion?

Would the elimination of the sources of *H. H.*'s "nervous troubles," *i. e.*, the fecal poisoning from retarded digestion, not be a potent factor in avoiding the danger of her sliding into the subnormal type? Would it not, perhaps, even help her to glide with facility through the atypical class into the typical?

I now take up the case of *M. A.*, **Case 81**, 14 years old, male (Figs. 61 and 62), and comparing his general clinical history with his casts, I find my observations along these lines substantiated more than in other cases I have yet seen.

The anterior occlusion, the mesio-distal relation of the right first molars and with it the posterior occlusion of the right half of *M. A.*'s mouth are almost normal with the exception of the inlocked upper right cuspid.

Were it not for this and for the unfortunate error of having his upper left first molar extracted, which caused the lower left second molar to erupt out of alignment, *M. A.* could have boasted of absolutely perfect occlusion. Why?

His general clinical history reports that up to the age of 7 his physical condition was normal; he was not a mouth breather, he had neither tonsils nor adenoids, and last but not least, he

was breast-fed. In one word, he passed through the developmental stage of jaw-bone growth without any handicaps.

M. A. is undoubtedly one of the cases where the causes for a stunted mental development are to be looked for elsewhere, not in the mouth; and when these causes are looked into, it is found that while they have influenced brain development, their occurring later in childhood, after the age of 7, have left untouched the facial expression of *M. A.*, which in spite of his unfortunate mental status presents an intelligent appearance. The proper jaw-bone development and the contributing of it to the proper development of the rest of the bones of the face has blessed him with at least one handicap less. From a psychological standpoint, a pleasant exterior is perhaps no small factor contributing to overcome the difficulties with which the exceptional child has to count in the world.

The six illustrated cases were taken from among a number of about twenty children examined and observed at Herbart Hall, in Plainfield, N. J.

VII. HABITUAL CONSTIPATION¹

By DOCTOR B. ONUF, Park Ridge, N. J.

Constipation and Exercise.—How often is the neurotic, who is so frequently subject to habitual constipation, directed to take much exercise! Careful observation teaches, however, how ineffective or sometimes even harmful such a direction can be if not taken in the right sense. The exercise in itself, be it walking or gymnastics, bicycling or bowling, etc., is not at all conducive to repairing the disturbed intestinal function underlying the constipation. In the cases in which it is of any use the improvement is not caused by the exercise itself but by the accompanying mental relaxation. Without this psychic relaxation all exercise is useless. The intestinal function requires, so to say, a certain amount of mind for its successful performance, and has to suffer when deprived of the same. If the mind is

¹ This contribution is part of a paper published by Doctor Onuf under the title "Psychotherapy," in the *Journal of the American Medical Association* of June 6, 1908, and is here reprinted in modified form by permission of the author as being of great value for the physical welfare of children.

occupied by a certain train of thought to the exclusion of everything else, there is nothing left of it for the intestine.

In such cases exercise may be directly harmful, the patient needing at times complete physical and psychic rest instead. Lying on a couch for half an hour will then benefit him more than a long walk or other physical exercise.

The above deductions find, in a certain sense, an interesting confirmation in the investigation carried on by Doctor Joseph Merzbach. This author made inquiries from 233 letter-carriers, 243 policemen, and 102 office clerks in regard to the movements of their bowels. This clinical material represented therefore occupations with excessive, moderate, and little bodily exercise, respectively. His conclusions, expressed with a certain reserve, it is true, were these: "Rest and ordinary exercise, but not excessive exercise, are equivalent in their functional results. Violent exercise certainly contains a factor influencing peristalsis, but this influence is more frequently in the direction of inhibition rather than in that of stimulation. Rest acts least favorably (*i. e.*, in the smallest percentage of cases), but also much less unfavorably than moderate and excessive exercise."

Mental Attitude in Defecation.—Of great importance is also the attitude during defecation. In this act, too, the intestine requires a certain participation of mind for securing proper function. Defecation is only to a small extent an act of the will, but is in a large part dependent on peristalsis, which cannot be influenced by the will. Pressure movements, if not made at the right moment, are therefore not only unsuccessful to the immediate result, but even detrimental to the final result through the discouragement which the inefficiency causes. The action of mind must restrict itself to paying attention to the intestinal stimuli and yielding to them. This is accomplished chiefly through the relaxation of the sphincter and usually results in the discharge of gases which facilitates a further movement of the fecal mass. In this way, consciousness supports indirectly the peristaltic movement of the intestine which it cannot influence directly. For this reason the patient needs not feel discouraged when the result of his efforts is only a discharge of gases and no defecation, for the movement of the fecal mass has been furthered by this action, and his next attempt is apt to be successful, *i. e.*, to produce stool, especially

if the patient will, as I would recommend, make two attempts daily at defecation. If one does not take his time about it, and fails to heed the intestinal stimuli, being taken up with other matters, and is anxious to get through quickly, the above-mentioned intestinal stimuli will often fail to appear, or rather they are psychically suppressed, crowded out by the predominance of other contents of consciousness. Furthermore, the attention is too much diverted to react properly, and thus the effect is frustrated.

The Psychic Factor.—This does, of course, not exhaust the subject of habitual constipation. It was only my intention to emphasize the importance of the psychic factor in the treatment of such conditions, and, in closing, to draw attention to the brilliant results achieved in many cases by a purely psychic treatment, of which fact Dubois's experience gives most eloquent evidence.

VIII. DEFORMITIES IN CHILDREN

By DOCTOR E. H. ARNOLD, New Haven, Conn.

Classification.—Deformities in children are: *A. Congenital; B. Acquired.*

A. Under the *congenital deformities* those that show hereditary traits are in a sense the more consequential, since they are apt to recur in a family. A type of such deformity is *polydactylism*. Congenital hereditary *clubfoot* is not particularly rare. In these cases the tendency to deform attaches to the primary germ-cell. A variety of hereditary deformities which need not necessarily repeat in a family is the *atavistic deformity*. As an example of this we have the *cervical rib*. This is not infrequent in children, and may give rise to no symptoms during childhood and youth; but as the normal skeleton has completed its growth, growth seems to start in these ribs and they may then grow to quite the size of an adult rib, causing pressure on the nerves and large blood-vessels in their neighborhood. The symptoms from such pressure are usually felt first in the arms.

B. Acquired deformities occur as (1) Weight Deformities; (2) Contractures.

(1) *Weight deformities*: If superincumbent weight is faultily distributed, the bones supporting such weight will be deformed.

If the bones supporting this weight be diseased, the chances for establishment of deformity are, of course, greater and the deformity is apt to be graver in degree. Unsound bony tissue may deform, however, even under proper amount and properly distributed weight. In looking for a causative agent in improperly distributed weight, we find that they may be (a) static, (b) habitual, and (c) vestimentary. The terms explain themselves. One leg considerably shorter than the other may make so much tilting necessary that a lateral curvature of the spine may readily be necessary to throw the weight of the upper part of the body so as to bring the centre of gravity within the base of support. Quite a percentage of lateral curvatures, however, have been properly attributed to bad habits of distributing weight in standing or sitting. Faulty sitting posture in poorly devised and adjusted school seats has been held responsible for the establishment of bad sitting habits. One of the most frequent forms of deformities caused by clothing is the deformity of the chest due to wearing ill-fitting corsets. Much more frequent still are the deformities of the feet due to poorly constructed shoes.

(2) *Contractures*, as the name would imply, are shortenings of the soft tissues. Quite a variety of these are met with. We have here:

(a) *Skin contractures* in consequence of extensive scarring, especially after burns.

(b) *Connective-tissue contractures*, such as the contraction of tissue around the joints after inflammation of a rheumatic character, the contraction of the tissue around veins, etc.

(c) *Muscular contractures*. These are fairly rare. In one variety the muscle contracts primarily after injuries. Much more frequent are the second great muscular contractions or shortenings that become established as a consequence of paralysis of some standing. In this category belong the contractures of apoplectic paralysis, also those of infantile paralysis. Naturally, the latter variety will have its greatest toll among children.

(d) *Contractures due to disturbances of the nervous organs*. Under this heading we recognize reflex, spastic, and paralytic contractures.

Under the heading of *reflex contractures* we have faulty reflexes of the several special senses; for instance: great difference of

sight in the two eyes, great difference of hearing in the two ears may readily bring about, as a reflex, a habitual bad posture of the head which will ultimately end in a contracture of the soft tissue, being an example of a habitual weight deformity ending in a contracture which we shall see hereafter is quite frequently an outcome of the conditions.

Spastic contractures may be the consequence of peripheral or central nervous disturbances. Under the second heading we find spinal and cerebral spasms responsible for contractures.

The *paralytic kind* likewise presents the spinal and cerebral varieties.

Etiology.—The classification given above carries in a large measure an account of the etiology of deformities. A word may, however, not be amiss about the etiology of those weight deformities that come to exist from unsound bone tissue. Two of the etiological factors are important by their frequency.

The first one is *rickets*, a disorder becoming more and more prevalent in the United States, where it was formerly a rarity, except in the very largest centres of population. It is largely a matter of artificial feeding of infants, poor oxygenation of blood by living in crowded quarters, and the lack of sunshine. Fortunately, most of the rickety deformities are inconsequential. They have a tendency to cure out spontaneously in the cases which are milder in form and shorter in duration. On the other hand, dwarfing and microcephalus occurring in consequence of rickets present the severer degrees of the sequelæ of this disorder.

The other frequent cause of unsound bony tissue is *tuberculosis*. It would be "carrying coals to Newcastle" to speak of the frequency or the cause of tuberculosis in these days. Bone tuberculosis presents all degrees of severity, from the lightest that pass over without any deformity or loss of function even without treatment, to those that will go to appalling degrees of deformity in spite of the best of treatment. Bone tuberculosis, like rickets, is especially a disease of early childhood, the classical age being between 3 and 4. The most sinister outcome in bone tuberculosis is presented by the fact that though comparatively few people fall victims directly to the onslaught of bone tuberculosis, a great many succumb to intercurrent diseases, for in a series of people of advanced age, 50 to 60 and

more years, one will find a very small percentage indeed of people with tubercular deformity.

Diagnosis.—The diagnosis of existing deformity can be made by a layman. To diagnose deformity before it becomes firmly established must be the most desirable way in approaching the problem of deformity. The treatment of deformity can only be instituted intelligently if the etiological factor is known. For unless we remove the cause, a good many of the deformities show a most pertinacious tendency to recurrence. It is not always easy to establish the fact whether we are dealing with a weight deformity or a contracture, since weight deformity of long standing will have secondary contractures as a necessary consequence; and it is equally true that contractures of long standing will bring about weight deformities. In order to treat to the best effect, the sequence of events and the etiological factor operating in bringing the deformity to the degree which it presents at examination must be known. In the last instance, a differential diagnosis is important for a proper prognosis.

Treatment.—The treatment of deformities is general and special.

The general treatment is that of good hygiene and sanitation as a *preventive measure*. The deformity established, general treatment is largely symptomatic.

Special treatment is preventive as well as treatment of the actual deformity. Congenital deformities do not lend themselves to preventive measures in any degree; but *acquired deformities are practically all preventable*. In the last instances, rickets, tuberculosis, infantile paralysis, which form such a large quota of acquired deformities, are certainly preventable. Static weight deformity, habitual weight deformity, and vestimentary ones with sound tissue are practically all preventable. Even a great many of the spastic paralyses are preventable as far as they rest upon syphilitic ground, or upon trauma to the skull at birth. A vigorous campaign of education against the above-cited causative agents of deformity will certainly make them diminish in numbers. The deformities once established can be reached by local treatment, which may be mechanical or surgical.

Under the *mechanical treatment*, treatment by massage, passive and active exercise, as well as retentive apparatus and braces are all of great use.

The *surgical treatment* of deformities has made great strides forward in the last decade. The reclaiming of overloaded muscle by proper brace support, the prevention of paralytic deformities by brace, have been followed by tendon and muscle transplantation, by silk tendon and silk ligaments (intra- and extra-articular). Osteoplastic operations on joints, osteotomy on bone shafts, arthrodesis on flail joints have all proved their value in given cases. To these has been added bone-grafting, which has a large field of usefulness in the relief of deformity. Decompression for the relief of cerebral spastic paralysis, the cutting of the sensory spinal nerve roots for spinal spastic paralysis, have had some brilliant results in the treatment of these otherwise intractable and distressing conditions.

It is for the orthopedic surgeon to weigh off which one of these procedures is to be used at certain stages of deformity. Surgical procedure is becoming so complex that orthopedic surgery has come to be recognized as a special branch of surgery, and its mission is mainly the choosing of proper means of treatment at the proper time.

In the prevention and treatment of deformities, it is evident the home, the school, and the orthopedic expert must co-operate. Early clinical diagnosis is essential.

IX. THE RÔLE OF NEUROMUSCULAR EDUCATION IN TRAINING ATYPICAL CHILDREN

By DOCTOR C. WARD CRAMPTON, New York City

Three Parts of Conscious Reaction.—An atypical child is deficient or exceptional in one of the three parts of conscious reaction to environmental necessities. First, he may be actually deficient in some one or all of his sense-perceptions. The *rate* of percept reception may be either too slow or too rapid. Next, the sense-perception once received may fall upon a mental equipment which is either intrinsically lacking in receptive abilities, or too dull, untrained, or unalert to successfully incorporate the percept with proper relation to previous knowledge; third, the apperceptive mass may be too busy with internal affairs, or lacking in ability to discriminate and assort, to receive impressions from a hyperesthetic sense-mechanism. Further,

either too dull or too nervous a mind will be relatively devoid of memory images or previously received sense-perceptions, and we have an account of too high or too low a nervous potential, a failure of the perceptiveness to adequately incorporate the new stimulus within itself.

Handicap of Habits.—With these possibilities of deficiency in the receptive process, deliberative habits which might lead to proper kinetic response are severely handicapped, and there results either no action at all, or an inappropriate, inadequate motor expression. With these points clearly in mind, the common practice of finding fault with children because their behavior is inappropriate, assumes a deeper significance than formerly. It is comparatively useless to find fault with inaccurate and inco-ordinated moods and expressions of personality.

Processes of Dealing with the Handicaps.—In dealing with crippled minds it is best to follow the principle which this department¹ has used in dealing with crippled or defective bodies, *i. e.*, blind, deaf, tubercular, and crippled, and to develop the powers that exist in the hope of developing their processes to overshadow unremediable deficiencies. In a mind where certain faculties are left out, this course should be pursued. For a mind whose processes are weak or faulty in speed, much can be done by persistently and intelligently training in simple motor problems.

Process 1: Strengthening Weak Powers.—For the inert, unresponsive child apparently unable to exercise volition, simple passive movements accompanied by the gymnastic command should first be used. For instance, the teacher commands: "Raise the arms!" and herself moves the arms of the child. This is followed by a command similarly executed: "Lower the arms!" This may be done slowly not more than eight times, but may be repeated thrice within twenty minutes. After a sufficient practice, the child may be made to get the appropriate response with the passive movement. The teacher may indicate the movement herself without touching the child. This method should then be extended to other movements. By this process the powers of reception, deliberation, and volition are gradually awakened if they exist potentially in any degree

¹ Department of Physical Training, New York Public Schools.

whatsoever. Upon this basis, all kinds of instruction in any appropriate field whatsoever may be set forward.

Process 2: Objective-Subjective Methods.—It will be found that many atypical¹ children are able to do various simple natural movements which have some purpose. They are unconscious of any volition in connection with them. These movements may be used to establish the process of learning and of conscious subjective volition, the highest and usually the weakest of all mental processes. Take, for instance, *walking*, which most children can accomplish without difficulty. The teacher gives instructions to walk to the front of the room, pick up something and return to the seat; next to walk around the room and in order up and down the aisles, and to various places and return, always commending accuracy, and gently criticising failure. Variations in rate should follow, and variations in length of step may be undertaken. Next, there should be introduced jumping, skipping, and the like. Arm movements may then follow in combination; first the arms may be extended sideways, then moved up and down as if flying. Next, movements of the arms should be undertaken in the same rhythm as the walking. The greatest care should be taken not to make progress too rapidly and earlier lessons should be reviewed step by step.

The next step should be the *correlation of the external and the internal rhythm*. For this purpose the phonograph provides the most excellent means. The simple marches and waltzes with a most decided and emphatic rhythm should be used. The whole process should begin again with simple walking, and elaboration may be made in a manner above indicated. It is of great profit to introduce some of the simpler folk-dances which are appropriate for normal children of 6 to 8 years. Some of these have a song in connection with them, and this provides an admirable method of awakening the whole child to a co-ordinated mental and physical activity. The results which have been derived from this process are astonishing. Minds apparently hopelessly lacking in reception, deliberation, and volition have disclosed their hidden abilities, and others too dull or too active for accurate co-ordination have adjusted their modes of combined

¹ Doctor Crampton does not use this term precisely in the sense of the author's terminology.

action to each other with a beautifully smooth and natural terminal product of normal child activity.

As a last term in the series of subjective-objective motor problems, and as an item of daily motor practice for pupils in process of training, the simple folk-dance has an undoubted value and a peculiar significance. It is a form of whole-child activity which has been practised spontaneously by hundreds of generations of children; only the most appropriate forms have survived, and these are the ones that have passed the great human test of child choice. They are of tremendous biological significance, and when learned and practised they bring children into a realm of normal human activities from which their deficiencies have previously barred them. To develop the ability to practise them is indeed a wholesome gift to these children, and upon this solid basis a normalized structure of mental activity may often be successfully raised.

X. THE INFLUENCE OF BREATHING AND SPEECH UPON THE CHILD'S MENTALITY

By OTTO GLOGAU, M.D., New York

Speech and Breathing.—In comparison with speech, breathing is a rather low function, met with in both plants and animals. Through it, exhaust substances of the body are exchanged by fresh chemical elements of the surrounding medium. Speech, the expression of thought, is the exclusive privilege of the human race. It serves the exchange of mental fluidum between human souls. There exists, however, an intimate relationship between the physical process of breathing and the psychic, complex act of speaking. We shall endeavor to reveal the influence exerted upon the child's mind by disturbances of breathing and of speech.

As the brain matter is the organic substratum for every psychic manifestation, the latter will deviate more or less from the norm when the former is insufficiently nourished. The mechanical hindrances which affect breathing interfere with the normal oxygenation of the blood, and thus produce an under-nourishment of the sensitive brain tissues. In nasal obstruc-

tion, whether due to hypertrophied turbinates, deviation of the nasal septum, or enlarged adenoids, the child is forced to breathe through the mouth. Thereby the air reaches the sensitive alveoli of the lungs in a cold, dry, and dirty condition. By passing through the nose, the air would have been priorly warmed, moistened, and purified by the vascular activity of the nasal turbinates. The insufficient supply of air produces a variety of symptoms, such as headaches, lassitude, inability to study or to do anything requiring mental concentration. The mechanical nasal obstructions interfere with the aeration of the Eustachian tube, the channel between the nose and the ear. The middle ear will dry out, and will easily become infected. The catarrhal and suppurative processes of the middle ear cause *impaired hearing*. Thus the acquisition of normal speech and consequently a normal mentality are interfered with.

Faulty Breathing.—Faulty breathing, accompanied by mental abnormalities, occurs, however, even with perfectly normal air passages. For *breath is not only the oxygen-carrier for the body, it provides also the propelling power for speech*. Normal speech depends upon the mastering of the difficult art of correct breathing. To facilitate matters, we shall term the process of breathing that serves exclusively the conservation of the organism as “animal breathing.” We differentiate it thereby from the type of breathing that is employed during articulate speech, and term the latter as “articulatory breathing.”

Mechanism of Respiration.—The mechanism of respiration is as follows: the flattening and downward movement of the diaphragm and the rising and expansion of the ribs widen the thorax. The lungs, during this act of inspiration, passively follow the expansion of the thorax and diaphragm. The recoiling elasticity of the ribs and lungs induces, without any muscular activity, the expiratory movement. Flourens assumed within the medulla oblongata a regulating respiratory centre, wherefrom impulses are supposed to emanate down to the branches of the respiratory muscles within the spinal cord. Recent experiments on animals, especially those made by Jacques Loeb, prove, however, that in animal breathing the assumption of a regulating centre is not necessary.

The structural peculiarity of segmentation met with in the low animal forms exists even in the highest developmental stage.

Each segment is dominated by a ganglion wherein reactive powers of both the sensory and motor nerves are stored. By very painstaking experiments on *Limulus*, Loeb proved that if the whole central nervous system with the exception of these ganglia be removed, the rhythmical respiratory activity continues unchanged. He also proved that every ganglion is the seat of an automatic periodic activity. He says:

In higher animals, the conditions controlling respiration scarcely differ from those in *Limulus*. There is a series of segmental ganglia in the thoracic portion of the spinal cord which sends nerves to the thoracic respiratory muscles of the respective segments. Chemical changes which are continually going on in the body, or in these segmental ganglia, under the influence of heat (the temperature of the body) produce a periodic activity in these ganglia and consequently in the respiratory muscles. The segmental connection existing between the ganglia and the muscles would bring about co-ordination just as it does in *Limulus*.

Human Breathing a Reflex Action.—Basing on these and other experiments, we assume that animal breathing in the human being is also a segmental function, and as such a reflex action. We believe that animal breathing is localized within the ganglion-cells of the motor-nerve roots of the respiratory muscles. The ganglion-cells of the different spinal segments are connected with one another by fibres whereby cells of different levels may be stimulated by the sensory irritation of ganglion-cells below and above their location. From the ganglion-cells of the different motor horns of the respiratory muscles, numerous conductive fibres also go upward toward the medulla oblongata, and form a connection with the nuclei of the speech muscles. Another set of conductive fibres go from the respiratory ganglion-cells through the medulla oblongata up to the brain. These fibres are, however, centrifugal. They originate in what we call the articulo-respiratory centre.

Inarticulate Sounds Also Reflex in Nature.—It is a fact that crowing, quacking, etc., animals continue to utter their inarticulate sounds even after their brain has been removed up to the corpora quadrigemina. Children born without a brain (anencephalics), and children whose brain has been destroyed during delivery, are still producing crying or whistling sounds. These

facts induced Kussmaul to localize the centre for inarticulate sounds behind the corpora quadrigemina. Believing that the formation of articulate sounds depends upon the integrity of this centre, Kussmaul called it the basal sound centre.

It is our assumption that there does not exist such a thing as a centre for inarticulate sounds. Within the medulla oblongata originate all motor nerves of the head, and terminate all sensory head nerves, including those of the muscles of speech. In addition to the interlacing of the nuclei within the medulla oblongata, by numerous connecting fibres, we assume that they are connected by special conductive paths with the ganglion-cells of the motor-nerve roots of the segmental respiratory muscles. In this way a reflex arc is established between breathing and the uttering of inarticulate sounds.

The first cry the new-born baby utters is nothing but a reflex stimulation of the nuclei of the vocal and articulatory movement; the sensory part of the reflex arc is the external irritation (lowered temperature and changed skin sensation) which simultaneously causes the first breath.

Both animal breathing and the uttering of inarticulate sounds can therefore be easily explained as reflexes without the assumption of any regulating centres.

Breathing and Articulate Speech.—We will now describe the changes in the type of breathing that occur when the uttering of inarticulate sounds develops into the articulate language of the human race. Suffice it to state that the articulatory movements of the first babbling sounds are reflex impulses that may be compared to the inco-ordinate movements of the baby's little hands and feet preliminary to the mastering of the arts of grasping and walking.

Through the aid of the senses of hearing, vision, and touch, assisted also by the muscular sense, the baby first learns to copy and repeat his own (primitive) sounds and gradually also those constantly repeated by the surrounding persons. Thus, through continuous training, first the mechanical, and gradually the psychic side of speech is learned.

In producing the above-mentioned primitive babbling sounds, there is not only deposited within the brain a picture of the position and tension of the articulatory muscles, but also a reminiscence of the power of breath passing by these gateways of speech

during the utterance of sound. The first consonants the baby uses are "p" and "t." The first words are "papa" or "tata." In order to pronounce the "p," it is not enough to press the lips upon one another and to open them. It needs an air-current of a definite power to explode the closing of the lips so that the sound of "p" may be heard. The same holds good for the other "occlusives," "fricatives," etc., where the air-current has either to push open a closed portal or to rush through a narrow one.

Language Centres.—The centres for language as recognized up till now may be divided into two types, sensory and motor, and are as follows:

First: a centre for the reception of the memories of spoken words;

Second: a centre for the reception of the memories of the appearance of objects as seen, and of words as written;

Third: a centre for the reception of the appearance of objects gained through the sense of touch;

Fourth: a centre for the memory of the muscular movements necessary for the performance of articulate speech;

Fifth: a centre for the memory of muscular movements concerned in writing.

The hitherto acknowledged centres of speech are, however, not adequate for the explanation of the entire process of articulation. We must assume the existence of an "*articulo-respiratory centre*" within the cortex of the brain. Within the "*articulo-respiratory centre*" there is deposited the memory of the action of the respiratory muscles during articulation. The articulo-respiratory word-picture thus obtained is due to the centripetal impulses originating from the sensory nerves of the lungs and the respiratory muscles. The exact state of the respiratory tract and the respiratory muscles during the production of the particular power of breath essential to the articulation of the respective word is thus, so to say, registered within the articulo-respiratory centre. The centrifugal pathway from the articulo-respiratory centre is formed by the innumerable conductive fibres between it and the ganglion-cells of the respiratory muscles within the spinal cord. If we now add the articulo-respiratory centre to the above-mentioned centres of speech, the process of speech will take place as follows:

Process of Speech.—Assuming that the impulse to articulate a certain word has arisen within the transcortex, the “throne of reason and thought,” it will be immediately carried to the different centres. The abstract idea of the word will thus become invested with all the material qualities of its object. The strongest impulses, however, will be imparted where the memories of the articulated word are deposited, viz., of its sound-picture, of the muscular activities during articulation, and of the articulo-respiratory power during its articulation.

These three centres, by means of intricate, associative fibres, stimulate one another and thereby enhance the co-ordination of their activity. The sensory speech centre seems to be the most vibrating one. The memory of the sound of the word to be articulated rises nearer to the surface of consciousness than that of its muscular and articulo-respiratory peculiarities. The impulses are then conducted from the motor speech centre to the cortical area of the speech muscles, and thence to their nuclei within the medulla oblongata. Simultaneously, the impulses from the articulo-respiratory centre travel to the cortical area of the respiratory muscles, and from there to their spinal ganglion-cells. While the sound-picture of the word rings uppermost in the mind, the speech muscles are set into the appropriate speech positions, and the articulo-respiratory air-current passes by them in the adequate strength.

From these considerations it becomes evident that any affection of the articulo-respiratory centre or its connections with the other speech centres will cause more or less marked disturbances of speech which, in turn, influence the psychic state of the child unfavorably.

The Psychic Mechanism.—Breathing during speech (articulatory respiration) is a psychic act. In a normal mentality we also find a so-called normal type of articulatory respiration. This type of breathing will, however, deviate more or less from the norm in the atypical, subnormal, and abnormal children, as Doctor Groszmann so ably classifies them. Before going into detail about the influence of abnormal breathing upon the child's mentality, we shall first describe the so-called normal type of breathing.

Normal Breathing.—Breathing during rest (animal breathing) is automatic or reflex. Thoracic and abdominal breathing pro-

ceed quite symmetrically. The inspiration is of about the same length as the expiration. Only a small volume of air is moved. Breathing takes place exclusively through the nose, provided there does not exist any nasal obstruction. The vocal cords during inspiration and expiration form an oblong triangle. The type of breathing as met with during speech differs from the former quite considerably. Here the breathing is distinctly under the influence of the brain, a so-called voluntary action. The thoracical or costal type of breathing prevails. The inspiration is very short, the expiration very long. Quite a large volume of air is moved. During speech, breathing takes place exclusively through the mouth. During inspiration, the vocal cords form a very large pentagon, in order to admit the onrush of air; during expiration, they form only a very narrow slit.

The Two Types of Breathing.—The difference between the two types of breathing can also be demonstrated by certain laboratory methods whereby so-called records of breathing are taken. The inspiratory and expiratory movements of the chest and abdomen both during rest and during speech are recorded by the so-called pneumograph. This instrument consists of a closed rubber tube expanded by a spiral spring. The tube has at its end a small outlet which is connected by means of a rubber tube with a so-called Marey's tambour. The pneumograph is fastened around the thorax and abdomen. The expansion and contraction of the thorax and the abdomen cause within the rubber tube differences of air-pressure that are imparted to the thin rubber membrane which covers the metal cap of Marey's tambour. To this membrane a very sensitive lever is fastened. With the afflux or efflux of air from the pneumograph, the point of the lever moves up and down on a rotating recording drum. Thereby a white line is registered on the soot of the paper stretched around the metal cylinder. The rotation of the latter is regulated by clockwork. After obtaining the record, the paper (which had been previously smoked over a candle or a gas flame) is removed from the metal cylinder and dipped into a shellac-alcohol solution. By drying in the air, the record becomes fixed.

Relation of Normal Breathing and Normal Speech.—During the past two years I had the opportunity of taking, at the

Speech Research Laboratory (Neurological Department, Columbia University), numerous breathing records of children suffering from various speech disturbances. I found deviations from the normal type of breathing, often during rest, and always during speech, not only in those central speech affections where the intellectual development of the child had been interfered with (sensory and motor aphasia, congenital deafness, etc.), but also in those speech defects where mostly psychic overirritability is present (stuttering, stammering, etc.). Due to lack of space we shall restrict ourselves to a discussion of the breathing abnormalities of the stuttering child.

The Abnormal Breathing of the Stutterer.—The normal breathing records show that during rest the waves for inspiration and expiration are almost of the same length. During speech, however, when we talk on a prolonged expiration, the wave of the latter is considerably longer, while the inspiratory wave is immensely shortened.

The study of the breathing curve of the stutterer reveals the following interesting facts. In lighter cases of stuttering the curves in breathing during rest (animal respiration) may appear normal. But in quite a number of the more pronounced cases of stuttering even the curves of breathing during rest show irregular elevations, sudden jerks and other deviations from the normal curve, such as point to a lack of control over the economy of breath. Basing on these findings, the experienced observer may in many instances diagnose the case as one of stuttering, without the stutterer having spoken even one word. During speech (articulatory respiration) the thoracic and abdominal breathing curves of the stutterer become directly pathological or, so to speak, pathognomonic. We find the short inspiration and long expiration replaced by an irregular conglomerate of inspiratory and expiratory jerks, by straight lines indicating the stoppage of breath, and by asymmetrical undulations.

Abnormal Breathing as a Cause of Psychic Disturbance.—How are the psychic irritations in the stuttering child produced through these abnormalities in breathing?

Let us suppose that through any reason whatsoever (trauma, fright, shock, infectious disease, etc.) a predisposed child acquires an affection of the articulo-respiratory centre or of the

fibres connecting it with the other speech centres. This child suddenly notices that he is unable to explode the closed lips with the strength necessary to articulate the letter "p." The same may be noticeable with any other consonant. Of course he will try to overcome the obstacle by increasing the air-pressure from the lungs toward the closed lips. This attempt to overcome his articulo-respiratory disturbance, when repeated over and over again, finally leads to the tonic and clonic contractions of the diaphragm and the other respiratory muscles which are the cause of the irregularities of the breathing records of the stutterer.

When the attempts to direct an adequate articulo-respiratory current of air toward the consonant portals have failed, the stutterer will try to bring about the correct articulation of the intended consonant by concentrating his attention to the speech muscles involved. The contraction of the respective speech muscles will gradually tighten and will last longer, whereby, in time, so-called tonic cramps will be brought about. If this attempt fails, a rapid succession of contractions and relaxations of the respective speech muscles will be resorted to, a procedure which, through inevitable exaggerations, will finally lead to their clonic cramps. At this stage, the psychic effects of the described attempts of correcting the faulty articulatory respiration will become evident.

"A never-failing symptom is the patient's lack of confidence in his ability to speak correctly. In some cases, the mere thought 'Will I be able to say that word?' is sufficient to make it absolutely impossible for the person to say it. The stutterer always lives with the fear that 'his speech may go back on him'; when the dreaded word is coming he avoids it by selecting another that will serve just as well. The fear of being ridiculous is nearly always present, also usually a condition of mental flurry. The embarrassment and sad experiences of the stutterer often lead to an abnormal mental condition. The patient is nervous, shy, easily embarrassed, retiring, odd in his ways, sad, etc. In some cases the change does not go beyond an increase of sensitiveness. Many stutterers, especially young women and school-boys, acquire a permanent facial expression that is typical of the profoundest sadness. The thought of suicide is frequent." (Scripture.)

Defective Hearing and Speech Troubles.—It is a well-known fact that children with impaired hearing, especially those suffering from acquired or congenital deafness, show a tendency to deteriorate or lose entirely the faculty of speech. Through this impaired conceptual ability, these children "may lose their normal characteristics and degenerate into permanent defectiveness." (Groszmann.) It is interesting to know that in these children with defective hearing the type of breathing deviates considerably from the normal. In acquired deafness, the pneumographic curve in mere breathing shows no peculiarities; it differs, however, during speech considerably from the normal. The inspirations are extremely frequent. The relation between the length of inspiration and of expiration also deviates greatly from the rule. The deaf child, in comparison with the normal child, speaks remarkably few syllables on one breath. Evidently, much more power is expended in the articulatory movements, as evidenced by the expiratory jerks of the thoracic record. This fact causes the characteristic heavy speech of the deaf. In a congenitally deaf child the foregoing peculiarities appear much more pronounced. The number of inspirations during speech exceeds those during mere breathing in an astonishing degree. The thoracic breathing curves show an extremely ataxic character. The later in life deafness is acquired, the more will the breathing curve during speech approach the normal. We may diagnose immediately from the breathing curves of a deaf child whether his affection is acquired or congenital. (Gutzmann.)

Other Causes of Speech Disturbances.—Disturbances of speech may be due to organic causes, such as defects in the organs of speech, obstructions to the current of air, etc., or to central causes, such as fright, trauma, shock, etc. I agree with Doctor Groszmann in classifying the child suffering from an organic speech defect as pseudoatypical or atypical, respectively. I object, however, to considering a child suffering from a central speech defect, even if due to congenital deafness, as "subnormal," *per se*.¹ I am much pleased to find that Doctor Grosz-

¹ This objection is possibly due to the impression caused by the constant abuse of the term "subnormal" as more or less confused with "abnormal." The absence of one or more "normal potentials" stamps a child as "subnormal," no matter what his intellectual abilities otherwise are. This is clearly shown in other chapters of this book.—THE AUTHOR.

mann, in the newly revised form of his classification, as used in this book, has made a distinction between "deaf" and "dumb." For every deaf child, by proper instruction, can be taught how to talk.

Correction of Speech Defects.—The results gained from the experiments made in the Speech Research Laboratory have taught us what the normal type of breathing is, both during rest and during speech. It may be assumed that in every case of speech defect, causing a disturbance of the normal mentality of the child, the type of breathing also deviates from the norm.

The correction of speech defects, aiming also toward the improvement of the mental qualities of the child, will therefore be greatly aided by appropriate *breathing exercises*. This training in the economy of breath will restore the lost control over the respiratory muscles. In order to prove successful, the breathing exercises must be founded on the scientifically established facts of the normal physiology of breathing and of speech. The improvement in breathing, the "*conditio sine qua non*" for the correction of speech defects, may be easily controlled by breathing records taken at regular intervals. Especially in the instruction of the stuttering and of the speaking deaf child, methodical breathing exercises are of immense aid. With the successful progress of the treatment, the breathing records show more and more a tendency to return to the normal type. For this reason, every clinic where the treatment of speech defects and simultaneously a remoulding of the child's mind is undertaken, should be aided in its aims by the valuable work of a Speech Laboratory.

It ought to be impressed upon both parents and teachers that normal speech and normal breath are the foundation of a normal mind.

The physical impediments to breathing and speech should be diagnosed, corrected or removed by the physician. The central defects of breathing and of speech should be restored to the norm by the speech instructor or by the Speech Clinic, greatly aided by the intelligent and sympathetic efforts of the parents and the school-teacher. Through this co-operation between physician, parents and educator, innumerable children will regain their mental equilibrium after it had been almost upset by their handicap in the expression and reception of thought.

XI. THE DEAF CHILD FROM THE STANDPOINT OF THE EDUCATOR

By JOHN DUTTON WRIGHT, M.A., New York¹

Classification.—In the classification of exceptional children as adopted in this volume, deaf children would appear under each of two primary divisions. Under Division *A*, they should be placed in Subdivision 4 of Group (*a*) of Section 2: "Impaired Hearing." Under Division *B*, they would come under Section 1. The term in that section is: "deaf, dumb."²

For educational purposes, deaf children who are otherwise normal should be divided into four general classes.

(1) Those with hearing slightly impaired after speech has been acquired.

(2) Those whose hearing has been entirely destroyed, or very seriously impaired, after speech has been acquired.

(3) Those with hearing slightly impaired from birth or early infancy.

(4) Those totally deaf, or with hearing very seriously impaired, from birth or early infancy.

Each of these four groups requires different educational treatment in order to bring the children most nearly to the educational standard of the normal child. The problem grows pro-

¹ This is the only not strictly medical contribution to this chapter; but it fills its place most legitimately and will be fully appreciated.—M. P. E. G.

² A comma seems a small and insignificant thing, yet its presence after the word "deaf" in this place indicates an advanced state of intelligence on the part of the creator of this classification. Too often, both by professional men and laymen, the term "deaf and dumb" is used indiscriminately to describe the speaking deaf and those who have never learned to speak. Unfortunately, there are "deaf and dumb" persons. But there are thousands of persons who, though born deaf, are not dumb, since they have been taught to speak. There are also persons who are dumb, but not deaf, their dumbness being due to some malformation of the organs of speech, or to some mental defect.

The author of this classification has very cleverly indicated these facts, and avoided the absurd nomenclature too often employed, by the simple device of inserting a comma after the word deaf, thus providing a category for the speaking deaf, and showing that he knows that dumbness is not necessarily an accompaniment of even total congenital deafness. As a matter of fact, deaf children of normal intellect who are given proper educational treatment do not grow up dumb.—J. D. W.

gressively difficult from the first group to the fourth, in which last very special skill and experience are required to even approximate the normal.

Effect of Impairment of the Auditory Sense.—Even slight impairment of hearing in a child is a far more serious handicap than a considerable degree of deafness in an adult, since it is very largely through the hearing that during childhood we acquire our speech and our understanding of language. A degree of deafness that, occurring in adult years, would not incapacitate a person for the ordinary pursuits of life and general social intercourse, would, if it occurred at birth or in early infancy, prevent the child from learning to speak properly and from acquiring language and mental development for which language and speech are essential.

Need of Early Diagnosis.—Every child should, therefore, be subjected to very careful observation during the first eighteen months, and if there are any indications of even slightly impaired hearing, some good ear specialist should be consulted at once, and with equal promptness the advice and guidance should be sought of some teacher of the deaf trained in the speech methods. The physician may be able to restore normal hearing or, if not, then the teacher will enable the parents to render the special assistance that the child needs in order not to fall behind in learning to speak and to understand.

Educational Treatment.—The space available in this volume will not permit the inclusion of detailed directions for the educational treatment of little deaf children, but the author of this contribution has provided this information in his little book entitled "What the Mother of a Deaf Child Ought to Know." We can only briefly indicate here the lines along which the educational treatment of deaf children of the four classes must run if the closest possible approximation to the normal is to be attained.

Home Care.—Parents, and the daily associates of children of the first group, those with hearing slightly impaired after speech has been acquired, can do all that is necessary for them. Constant and unremitting care should be taken to speak distinctly to these children, and there should be great insistence upon careful speech on their part. It will help greatly if the child is trained always to look at the lips of the person who is speaking,

and if those speaking to the child will form the habit of watching the child's eyes, and only speaking when his eyes are directed toward them. Also to stand, or sit, in such a way that the light will come from behind the child and fall upon the face of the speaker. The child should be taught to read early, and each day should be made to read aloud in the most painstaking way, and should be taken into the lap and be read to in such a tone of voice as will carry every sound distinctly to its ears. He should also be talked to while held in the lap as often as possible each day.

The ordinary talk that is addressed to little children about the pussy, the chickens, the dog, his brothers and sisters, father, mother, and playfellows, his toys and his occupations, should be the subject of these lap talks. Great care should be taken to use good, straight, connected English, not the foolish "baby talk" which is so unfortunately common when speaking to children.

When the child begins to go to school it would be well to arrange with some teacher to give him a little special attention in order to be sure that he does not miss some things which other pupils hear.

The Second Group.—The second group, those whose hearing has been entirely destroyed or very seriously impaired after speech has been acquired, presents a more difficult problem. The first element in success is a prompt beginning of special instruction *immediately* upon the occurrence of the deafness. If the matter is intelligently handled, the change in method of understanding speech from hearing to seeing can be made with comparative ease, and without much loss of ground educationally. Unless, however, prompt and intelligent measures are taken, there will be a sudden and complete cutting off of spoken communication with the unfortunate child who has become deaf. Furthermore, a rapid deterioration in speech will follow the loss of hearing unless unremitting and expert attention be given to the preservation of correct enunciation. The rapidity and degree of this impairment of speech will depend upon the age at which deafness occurs. The younger the child the more quickly and completely will speech be lost. This misfortune is preventable if the case is properly handled. If the child has learned to read before deafness occurred, some time each day

should be devoted to having him read aloud, paying the strictest attention to the clear and perfect articulation of every sound in each word. Great care should be taken to keep the child talking as much as possible all day long, as the tendency is to stop talking when the hearing is lost. Careless and imperfect speech should not be accepted, but distinct and careful enunciation should be insisted upon from the very start. It is almost essential that the aid of some one experienced in teaching speech to the deaf should be secured.

Lip-Reading.—Lip-reading, that is, the understanding of speech by watching the face of the speaker, is usually hard at first, and all who come in contact with the deaf child should show the greatest patience and gentleness, and repeat as often as is necessary, in order that he may not get the idea that people do not like to talk with him, and so cause him to stop trying to understand. The future happiness and success of the child depends so much upon the treatment that he receives by those about him during the first year after deafness comes that too much stress cannot be laid upon these points.

The Third Group.—Those whose hearing has been slightly impaired from birth or early infancy require still a different sort of attention. In these cases the *greatest possible use of the hearing that remains*, and the avoidance of imperfect articulation are the two things to be aimed at. An impairment of hearing so slight as in the case of an adult would not greatly matter, is a very serious thing in the case of a little child, because it prevents the unconscious acquisition of natural speech, and results in the child's speaking and understanding imperfectly unless very special care is exerted. From the moment that the slightest impairment of hearing is noticed all those who have to do with the child should take the greatest care to always speak clearly to him in a tone loud enough to be distinctly heard.

The habit should also be formed by those in charge of the child of watching his eyes and speaking to him usually when his gaze is on the face of the speaker. If this is done for a few months the child will form the habit of watching the lips of those addressing him, and will gradually acquire a considerable ability to read the lips and so supplement with his eyes his imperfect ears.

He should be frequently held in the lap and talked to close

to his ear, and when he is old enough to appreciate simple little stories he should be read to while sitting on the knees of the reader, whose lips should be near enough to his ear, and whose voice should be so pitched as to make certain that every sound reaches the child.

Great care should also be taken that he does not form wrong habits of articulation. His speech should be watched carefully and every effort made to teach him to make the sounds correctly. He should not be allowed to form the habit of substituting *ts* and *ds* for *ks* and *gs*, or of dropping off the final letters and syllables of words. In short, much more painstaking care should be given to his speech than is required by children whose hearing is acute.

The Fourth Group.—Those totally deaf, or with hearing very seriously impaired, from birth or early infancy, include the most difficult cases resulting from deafness. Without the greatest care and the most intelligent treatment these children will become typical deaf-mutes. Being totally deaf, or very hard of hearing before any speech has been acquired in the natural way, they will never learn to speak, or to understand the speech of others, without the most expert instruction continued over a period of eight or ten years, and under conditions that surround them with an atmosphere of spoken communication. If, during the educational period, between birth and 16 years of age, these children are permitted to develop, or are taught, any silent method of communication by means of *finger-spelling* or the *sign-language*, they will never attain to the maximum ability to speak and to understand speech, of which each individual is capable.

Even when a child is totally, congenitally deaf, if he is otherwise normal, he can be given as much education as he would have received had his hearing been perfect, and he can be taught some useful occupation by which he can be self-supporting.

It is not necessary to employ either finger-spelling or the sign-language in giving him this instruction. Unfortunately, in some schools in the United States the speech environment required for the best results in speech-teaching does not exist at present, though it does exist in many other schools. Conditions are gradually improving, however, and in the course of time all schools will at least have a department in which there exists a speech atmosphere—that is, in which all persons having to do

with the pupils will use only the spoken form of communication with them.

Occupations for the Deaf.—It would be hard to name any human activity in which some totally deaf person is not engaged, but those spheres of usefulness most open to them are agriculture and the manual trades and arts.

Surround the Deaf with Normal Conditions.—The variations from the normal of education and attitude toward life found in the deaf are, to a very considerable degree, due to the treatment which it has been customary to accord them. It is possible for the deaf to approximate much more closely to the normal when they are surrounded by more normal conditions between the ages of 5 and 16. If, instead of herding them by hundreds in great buildings under a single roof, and using finger-spelling and the sign-language in their education, they could be housed on the cottage plan in their schools, or be provided with properly organized day schools in their own towns, as is done in many instances, and were taught exclusively by the speech method in a speech environment, the unfortunate tendency of deafness to segregate its victims and exclude them from the ordinary intercourse of life would be tremendously reduced.

From the moment deafness is discovered the treatment of a deaf child should not differ in kind from that of the hearing child, though it should differ in degree. Much more attention must be paid to certain things and just as much attention to all other things. A vastly greater amount of thought and effort must be given to the child's speech and understanding of language when he is deaf, and just as much attention must be paid to his education and character-building.

Methods of Teaching.—It must at once be understood that those things which we ordinarily learn through our ears must be taught him through his eyes. Unfortunately, the eyes, unlike the ears, must be consciously focussed upon the source from which the impression comes, and that means that attention through the eyes must be secured and developed. Without this focussed attention the deaf child gets no impressions that have a bearing upon language. Therefore, from the very beginning, those associated with the deaf child should acquire the habit of watching the direction of his gaze, and of considering the light that falls upon the point they wish him to observe. So far as is

possible the source of light should always be behind the child, as it is difficult to get accurate visual impressions when looking toward a bright light. Good light conditions should be carefully maintained and the sight of the child safeguarded at all times. The child, also, should, from the first, be trained to direct his gaze to the faces of those addressing him. The earlier this habit of watching the lips of those speaking to him can be developed the more rapid and satisfactory will be his progress in understanding spoken language. The greatest difficulty in learning lip-reading for a child is to get as many opportunities of *seeing* language spoken *when the thought that is being expressed is in his mind* as the hearing child has of hearing spoken language at the moment when the situation makes its meaning clear. It is surprising how well the eye can interpret speech without the help of the ear, and if the deaf child could have as much practice in seeing speech under the same favorable conditions that the hearing child hears it, he would learn to understand when spoken to almost as well as if he heard instead of saw the speech. Even then, however, he would be greatly handicapped by his inability to catch anything that was said when his eyes did not happen to be fixed on the speaker, and would require much more attention than a hearing child of the same mentality in order to give him the same amount of information and mental development.

Unless very exceptional attention has been given a congenitally deaf child, he is at 4 years of age behind the hearing child of 2 so far as mental development and understanding of language is concerned. He has, however, a maturity of mind and of body not possessed by the child of 2, and if properly and efficiently taught can gradually overtake his hearing brother, until at 18 they are approximately equal from an educational standpoint. This result can only be attained when he has been given the most intelligent and unremitting attention both at home and in school. If the specific suggestions contained in the little handbook, "What the Mother of a Deaf Child Ought to Know," have been faithfully followed in the home up to 4½ or 5 years of age, and the child is then placed in a good oral school where a speech-environment is maintained, and is there given expert instruction in speech and efficient teaching along the ordinary educational lines, by the time he is 18 he will be able to do about all that he would have been capable of,

with his individual mental equipment, if he had possessed unimpaired hearing. To attain such a result under such a severe handicap is a triumph of skill, patience, and devotion, as well as of efficient organization, that forms one of the laurels of our civilization.

Deaf Children with Defective Mentality.—Up to this point I have been discussing the deaf child who has at least ordinary intelligence. Fortunately by far the greater number of deaf children are of average mentality, and if it were not for their deafness would require no different treatment from that provided for the perfectly normal child.

There are, however, deaf children of defective mentality just as there are such hearing children, and just as these mentally defective hearing children should be segregated from mentally normal children, and should be given special care and instruction, so should the mentally defective deaf be carefully segregated from the mentally average deaf, and given a special form of treatment. This statement would seem axiomatic; yet, strangely enough, this segregation is rarely provided for the deaf. A great injustice, both to the mentally defective child and the mentally normal child, is inflicted by placing the mentally defective deaf in the same schools as the mentally normal deaf. I cannot protest too strongly against this procedure. It is a disgrace to the intelligence of those responsible for the fact, and the sooner that this is understood the better it will be for all concerned. The regularly organized schools for deaf children are no more the proper place for a feeble-minded deaf child than the regularly organized public schools for the hearing are the proper place for a feeble-minded hearing child. The public are too prone to think that the regular schools for the deaf are not only the places to put the feeble-minded deaf, but even those abnormal or subnormal children who fail to acquire speech for some other reason than deafness. For many years the public schools for the deaf were in all States under the Department of Charities instead of the Board of Education. This has already been altered in many States, thus removing an unjust stigma from the deaf as a class whose education is no more a charity than that of any other children.

XII. THE BLIND CHILD¹

By DOCTOR F. PARK LEWIS, Buffalo, N. Y.

Fundamental Needs.—In the training of the blind child, three things must be emphasized:

1. The necessity of recognizing the fact that the child is blind or has defective sight, at the earliest age possible.
2. The manner in which the brain is developed through the training of the remaining special senses in the absence of sight.
3. The existence of that unusual condition, more highly developed in the blind than those who see, and what is sometimes termed the sixth sense, *touch at distance*, but which consists in the recognition of the nearness of any material body having a sufficiently large surface area by the perception of its approach through some other than that of conscious sight, hearing, or personal contact.

Early Recognition.—If there is reason to suspect that the sight is imperfect it is of great importance that the existence of marked *refractive errors* be discovered as soon as possible. In a very large number of markedly hypermetropic eyes, or far-sighted eyes, or those in which the two eyes are focally different, and more especially when one eye converges and there is a permanent squint, the brain area corresponding to the sight centre of the inturned eye ceases to function, and, following the law of nature, those functions which are not used cease to have the power of use. There has developed, therefore, an amblyopia, or dull sight, which, if uncorrected, becomes permanent, and a semiblindness of the inturned eye, lasting through life, is the consequence.

If, on the other hand, the proper refractive correction is made early enough, and the neurons, or nerve-endings in the brain corresponding to the sight centres, are made to function, the sight may be permanently preserved.

It is a matter of first importance that in cases of *squint* the child be sent to an oculist as soon as the defect is discovered. I have, myself, used with great satisfaction strong correcting glasses upon a baby as young as five and one-half months old.

¹ This contribution is a compilation from several of Doctor Lewis's papers, made with the author's special authorization.

Sometimes the presence of congenital myopia, or near sight, in very high degree gives the child a vague blind look which may lead to a *mistaken diagnosis of idiocy*.

I have seen such an instance in the case of a 5-year-old child whose eyes were myopic to the extent of ten diopters. To such a child all objects beyond five or six inches would have the appearance of being shrouded in mist, and the educative value of the visual pictures that are constantly being presented to the seeing child was thereby lost to him. The correction of the refraction gave the child such a degree of improved mental control as would hardly be thought possible.

As all young babies roll their eyes aimlessly during the first weeks of life it is difficult to determine, from observation merely, the absence of sight. This difficulty is increased if, as more commonly happens, blindness is not complete, but objects are imperfectly seen. If, however, the pupils are widely dilated and unresponsive to light; if the eyes continue to move aimlessly from side to side without attempt to fix them on any object; and more particularly when nystagmus, or spasmodic twitching of the eyeballs is present, associated with an unwillingness or an inability on the part of the child to follow a light with his eyes when it is moved before him, there would be strong presumptive evidence after the sixth month that the vision was so imperfect as to warrant an ophthalmoscopic examination by a capable oculist by which a conclusion can be reached with much greater certainty.

Early Impressions.—However rapid may be the development of the child after he has reached school age, the period of greatest plasticity and quickest responsiveness is during the months of babyhood and the early years immediately following, and it is through the sense of sight that impressions, carried to the cortex, or surface of the brain, exercise the most profound influence upon the brain development. With the visual images every other sense impression is correlated. The object which the child sees, in order that he may realize its position in space, must be verified by the sense of touch. All of those sensory nuclei, therefore, which have been energized by the touch of the fingers, if the object is held in the hand, of the feet as they touch the floor, of the arms and limbs as they move through the air—every one of these millions of neurons is brought into

direct relationship with the corresponding number of other neurons in the sight centre, so that every motion is sending a flood of nervous energy surging through the brain of the child. In that way he becomes conscious of his position in space, and he develops what is known as the stereognostic sense—or the consciousness of solid objects.

Cut off as the blind child is from the primary energizing influence of the visual impressions, he is intellectually hampered and limited unless every possible supplemental effort is employed to replace, as far as may be, the advantages which, in comparison with the seeing child, he is obliged to sacrifice.

The blind baby, not seeing the objects around him, is not, as is the seeing child, unconsciously or persistently being educated as to their form, their size, their importance, their meaning, in a word: their value. He lives in the dark, and every motion or every step which he attempts to make is an experiment and an adventure. The next step may precipitate him he knows not where. It may be from the top of a stairway. He can have no means of knowing. He is living in a world separate and distinct from that of his seeing associates. This fact should be early recognized and constantly borne in mind. The blind baby must be talked to more than the child who sees. He must be allowed, carefully, to touch the objects about him, in order that in that way he may learn what he can about them. He must not be startled by being touched suddenly and without warning. He must not be allowed to be frightened by taking a misstep. A nervous impression of that kind may leave its results for months, if not for years, upon that sensitive organism. When he is old enough to creep he should be allowed the freedom of a room from which all objects against which he might hurt himself have been removed. The floor should be of one level so that there may be no pitfalls for him. He must be allowed all manner of harmless things to handle, and he must *always* be spoken to when one comes near him that he may not be startled. Large motor and sensory areas may be trained by allowing him to feel, to touch, and to handle things varying in degrees of hardness, and smoothness, and of different shapes and forms. He will in that way be getting such approximate impressions as he can, limited as those are compared to the possibilities of the seeing child.

At a very early age, too, auditory areas may be actuated by singing simple melodies to the child, not in a vague and meaningless way, but carefully and in tune where it is possible for the mother to do so. The attention in that way can be directed and a recognition of different tones will begin at a much earlier age than is ordinarily supposed. Let it constantly be remembered that all of the moving pictures that pass before our eyes are blotted out for the blind baby. There is nothing but darkness before his unseeing eyes, and this monotony must be varied by greater attention to details that will interest him than would be necessary with a seeing child.

At a very early age any other existing corrigible physical defects should, if possible, be removed. It is bad enough for the child to be blind. He should not be still further handicapped by the presence of large tonsils, by adenoids, and the consequent otitis and deafness, or any other defects of the body.

The training of the voice to make it as musical and sympathetic as possible will be a great advantage to the child, and a quiet, self-possessed manner instead of a nervous and jerky one will not only make him more agreeable, but will give him balance of mind as he has poise of manner.

In a word, before the child can be placed under the systematic and special training provided for the sightless, much can be done by the intelligent mother, under the advice of the physician, to so aid the child's development as to make life easier and simpler when the systematic training of the school commences.

School Training.—The time in which the blind child should be placed under the instruction of those specially qualified to train him in a school for the blind is the earliest period at which children are admitted, and that is the kindergarten age. Very often mothers do great injustice to their children by failing to realize this important fact. The mistake is often made in keeping him at home through mistaken sympathy, when he should be under definite and systematic training. It is not at all unusual to find that blind children are denied the privileges of training until they are 13 or 14 years old, and are then reluctantly sent to the special schools and find themselves utterly handicapped by their inability to do the simple things that other blind children easily do, because of the mistaken

kindness of parents and friends. They are unable to put on their own clothes, to button their shoes, or to use their hands and fingers in the simplest mechanical effort. The handicap which they suffer is so great that it can never be completely overcome.

If the blind receive suitable training at a sufficiently early age to develop in them that strength of body, of intellect, and of character that is the prerequisite of any successful life, their possibilities, strange as it may seem, are not greatly lessened by their loss of sight. This has been demonstrated in the lives of a multitude of successful blind men and women. England's ablest postmaster-general, Mr. Faucett, was blind. He rode horseback, skated, and did many things that are supposed to require eyesight. The most wonderful and exact observations on the life history of the bee were made by a blind man, who directed the eyes of his servant. Blind musicians have written and played, and Mount Blanc has been scaled by blind men. It is the mind and the spirit which control, and when these are great they dominate and rise superior to mere physical deficiencies. The inspiration of great ideals must be held out to the blind, even more than to the seeing from the beginning.

Need of Normal Companionship.—At as early a period as possible in the child's life, he should be given an opportunity to play with other children of his own age. With a little supervision, he can be taught to enter into all of their games, and to do a great many things that are done by seeing children. It is as true of the blind as it is of those who see that the most important elements in their education come not from teachers but from their associates. The effect of having a blind child among a group of seeing children is mutually helpful. If the children are properly taught, they will soon learn to supplement the lack of sight in their companion by giving him a little help when necessary. They will learn to tell him of things that are about him and describe the things as they see them, and in consequence they will learn how to observe and express their thoughts, while he will quickly begin to form mental images, as far as he can form them, from his surroundings.

Special teachers for blind children are exceedingly difficult to obtain, and they are rarely necessary. It is not usually desir-

able that the child should be placed under the care of a governess or tutor, so essential to the development of the child is the contact with other children. In some of the larger cities, such as Chicago and New York, provision is made in the public schools for blind children, and those having such defective sight that they are unable to follow the usual school curriculum. In almost every State there is now a school for the blind, and where special provision is not made in the public schools, or even sometimes when there are special classes, the child should be sent to a school for the blind at the kindergarten age.

It is the general opinion of those teaching the blind that the more nearly they can be trained as seeing children are, and the fewer distinctive methods are employed, the easier will it be for them to adjust themselves later in life to conditions that obtain among the seeing.

It has seemed necessary up to the present time that special schools should be provided for the blind, but thoughtful students of pedagogy are beginning to believe that to have the blind in classes of seeing children is not infrequently of mutual advantage. During a period in which a school for the blind was undergoing repairs, a bright and ambitious pupil was taken temporarily into a class of a high school in a near-by city. When, after some months, he returned to his own school, the superintendent, in speaking of this boy's work, said that his presence in the school had been of greatest help to the other lads with whom he had worked in class. His success in overcoming difficulties was a stimulus to their pride, and an incentive to their ambition. His presence in class was a constant reminder to them of their superior physical advantages, and they were ashamed to have him outstrip them as he did in their intellectual work. The lad was of a gentle, kindly disposition, and his fellow-students emulated each other in showing little kindnesses to him, and he introduced thereby into the atmosphere of the school a quality of self-sacrifice, of courtesy, and of chivalry, the effect of which was long continued.

The added importance of having blind children educated in connection with those who see is that they may realize more keenly the real difficulties of life which are to be met and which have to be overcome. They will not always find kindness and

courtesy, and they must be prepared to adjust themselves to the harder conditions when they arise.

Some Remarks on Method.—Even for the younger children, special appliances for the ordinary conveniences of life are rarely necessary. They must eat at the common table, they must use the knives, forks, spoons and plates that other people use, and in the way that other people use them.

One of the most important elements in the instruction of the blind is that they should be trained early to distinguish coins from the sense of touch. This is not difficult but it requires a little special application. The size of a penny, a dime, and a quarter are sufficiently unlike to make it possible for blind persons of keen intelligence to immediately distinguish them. When the sense of touch is sufficiently trained it is possible to differentiate between American and Canadian coins, even when of the same denomination. A blind lad in one of the State schools has his ear so acutely trained that when coins are jingled together in the pocket he is able to tell with almost absolute accuracy the number of coins and their value, and whether they are silver, copper, or nickel. As each has a tone peculiarly its own, it is only necessary that the ear should be keen and that close attention be given in order that this may be done.

In the training of the special senses other than that of vision, the absence of sight, so far from being a disadvantage, is a positive help. While it is now generally recognized that no one sense is made more acute by the absence of others, the opportunities for special training are greater, and the probabilities are that the blind child will have keener hearing, if no organic defect is present, than the child who sees.¹

Varieties of Work.—In the education of the blind child of course it must be early determined, as with those who see, what in general are the broad lines of limitation. There are those who are mentally sluggish who may be made more active, and there are those who from congenital deficiencies must always remain upon the border-line of intelligence, or among the vast

¹ It cannot be the purpose of this book to enter into the details of the teaching of the blind. The author therefore omits references to methods of teaching reading and writing (the "American Braille" or point print; the Moon alphabet), the use of the typewriter for the blind, etc. All this is special work which can be studied by those interested in the literature of the subject.—M. P. E. G.

number of those in whom the loss of sight is the only incorrigible defect. The possibilities of mental development are quite as great as among those who see.

The possibilities of the blind and the varieties of work which they can do are much wider than ordinarily realized. There are blind persons who are successful in business, in the law, in medicine; they have become successful teachers, musicians, and writers. Many simple mechanical lines of work are satisfactorily taken up without the aid of sight. It is readily evident, however, that those occupations which are mental rather than physical are those in which they succeed in the highest degree, and when it is possible these should be the lines chosen for those who must make their way in the world without sight.

Amusements and Special Inventions for the Blind.—The amusements of the blind must not be neglected. It is depressing to live in a night that has no morning. It is frequently easy for friends to bring much cheer into such lives with little effort. The New York Association for the Blind had as its initiative the establishment of a ticket bureau to which those having tickets for concerts and lectures which they were unable to attend were asked to send them for distribution to the poor blind, to whom such opportunities were rare. Such bureaus are easily conducted and give much pleasure at little cost. Playing-cards are made for the use of the blind, having on one corner raised marks indicating their value. They also have special forms of games, such as chess, dice, dominoes, mechanical puzzles, and other objects of interest and instruction.

The most convenient method of correspondence for the blind is by all means the typewriter. Its use is easily acquired, and no special appliances are necessary. It can be used by means of the touch system without the necessity of sight. Many blind typists are as expert and as accurate as those who see. A system of stenography has also been devised for the blind in which raised notes can rapidly be taken, and these are rapidly transcribed by the typist.

A watch has been invented for the blind or those who wish to tell time in the dark. The hours are represented by twelve movable metal dots. Each dot disappears as its hour is reached. This necessitates only the use of a minute hand. The four pegs placed at the quarters enable a quicker reading of the time.

For the intelligent blind man, however, no such device is usually necessary. He uses the ordinary watch from which the crystal has been removed, and from his knowledge of the location of the hours he is usually able by touching the minute hand with the finger, to determine the time with great accuracy.

XIII. HEREDITARY WEAKNESS, PREDISPOSING TO TUBERCULAR DISEASES, AND ITS PREVENTION

By DOCTOR THEODORE TOEPEL, Atlanta, Ga.

Predisposition vs. Heredity.—It is a well-known fact which is supported by scientific findings that tubercular conditions are not inherited, but that the predisposition, such as bodily weakness, is transmitted from the parents to the children.

It therefore becomes the duty of the parents to live a hygienic life under the most favorable sanitary conditions in order to have their children endowed with the most essential requisite of life, namely health.

Systematic Habits of Living.—The parents must adopt systematic habits of living; to do the right thing over and over again relieves the brain of unnecessary thinking about what must be done.

It is well to start the day on schedule time without losing a minute; this necessarily requires regular habits of retiring in order to give the body rest in the form of sleep.

In my opinion and experience I have found the *sleeping-porch*, open on two sides, to be the best place to get a good night's rest; where this is not possible one should sleep with all windows open, invigorating the body with fresh air for the next day.

The length of time necessary to rest the body depends altogether upon the individual, his nervous system, muscles, organs, temperament, and his daily pursuits in life. Our great Edison claims that four hours is sufficient for any one, and sleeping more than that is stealing from productive power; while the famous Gladstone found eight hours necessary to keep his body refreshed for daily work. But to-day most hygienists agree that the average body requires eight hours of sleep.

Exercise.—Exercise being as necessary as sleep and food, it is advisable on arising to go through a set of exercises which involve the large muscles of the body, in a room where the temperature is comfortable so that the body is in a glow before the bath. These morning exercises start every organ in your body in the right direction, especially the circulation, and you are ready for the bath.

Stimulants.—Some people require their morning toddy as a stimulant to start the day, others must have a cup of strong coffee or coca cola. But I agree with Benjamin Franklin, whose rules of life were: "Tolerate no uncleanness in body, clothes, or habitation." The best morning tonic after the exercise is to get into a tub of cool water, giving the body a good rubbing with a coarse towel before putting on clean clothes. At least twice a week, just before retiring, every one should take a warm bath, using plenty of soap.

Mouth Hygiene.—More and more does the medical profession realize the importance of proper mouth hygiene. In co-operation with the dentists, much has been accomplished in reducing the spread of diseases, especially that of tuberculosis, by keeping the mouth clean. Brush the teeth every morning with warm salt water, then drink a glass of cool water.

Dress quickly and carefully without rushing, being sure that the underclothing is clean, and that the top clothing is brushed and neat-looking.

Breakfast.—The breakfast should consist of simple, plain food, such as fruit, cereal, and milk with bread and butter rather than steak, fried potatoes, hot biscuits, and muddy coffee. Take your time and eat slowly; you will get more benefit from it. It is not how much you eat, but how well you assimilate that makes it nourishing.

When all the processes of digestion work together properly, there should be a perfectly natural and regular evacuation of the bowels. The frequency of such evacuations varies somewhat, and is largely a matter of habit. With some people it is twice a day, with others once every other day. But with the vast majority it is normally once a day, and about the same time, shortly after breakfast.

Professional Precautions.—To enumerate all the many precautions that the different occupations and professions require

would make this contribution too lengthy. Suffice it to say that a number of States are now protecting the employees of dangerous occupations by requiring safety appliances on machines, and guards to prevent the inhaling of dust or poisonous fumes.

Other Matters of Daily Routine.—Go to your place of business leisurely, avoid rushing so as not to disturb the digestion, if possible walk—walk with your head high and your chest up.

With all these good habits formed you will begin your work cheerfully, you will choose friends who are cheerful and amiable, and your daily life will be one of joy.

If possible, take a rest at noon, go home and eat a meal in company with your loved ones. Again, as for breakfast, eat simple food, such as soup, vegetables, one meat and a glass of water; rest fifteen minutes after the meal, then return leisurely to your place of business.

Some time during the hours after noon, a person should find time to do some recreative work, *i. e.*, work different from the daily routine in the office, shop, or home; an hour spent in the garden, or on the golf-links, or tennis-court, will tone up the whole organism, and will help to remove the accumulated poisons collected during the hours of routine labor.

When you sit down to your evening meal, remember only the pleasant and humorous things of the day which you can relate. It is very necessary that the food shall be light, wholesome, and easily digestible. After supper, in company with the family, every one should partake of some interesting recreation which will act as a safety-valve or outlet for superfluous energy, as well as rest and change from the regular work.

Special Precautions.—Besides these general rules of hygiene it is well, if one of the parents has contracted the tubercular bacilli—which fact has to be ascertained by a competent physician—that special precautions be taken so as to prevent the spread of bacilli to some other members of the family.

The wisest plan is to isolate the infected member either by sending him to one of the many institutions where he receives special care and where the disease is arrested; or by having him sleep and live in the open air at home, practising the necessary precautions. If the patient has fever, absolute rest is essential;

where no fever is present, moderate exercises may be taken with care.

He should have an abundance of nourishing food, especially of fatty food, meat, eggs, and milk. Any other foods that he likes to eat and can digest should be taken. Lunches should be eaten between meals and on retiring. A skilled physician should watch and guide him in the treatment and should institute such regulations in the household which protect the other members of the family against any possibility of contracting the tubercular disease.

The patient should always think of the safety of others, and should take care not to endanger those about him.

Conclusion.—I wish to reiterate that, although it is a fact that some families are more affected by tuberculosis than other families, it is not true that children in these families are born with the tubercular bacilli in their bodies. But it means that they have less power to kill these bacilli. Every person has the opportunity of increasing his power of resistance by adopting a hygienic life such as is laid down in this simple outline.

XIV. OUTDOOR SCHOOLS AND MEDICAL TREATMENT FOR EXCEPTIONAL CHILDREN

By DOCTOR EDWARD S. KRANS, Plainfield, N. J.

The writer's experience has been limited to the groups of pseudoatypical children and atypical children proper. The former, as a rule, respond quickly to fresh air, food, and the correction of minor bodily ills; while the latter require more time, more pedagogic manipulation, more care in adapting the daily régime.

Routine of Medical Treatment.—In undertaking the medical treatment of such cases the following routine is observed as far as possible:

(1) Provision is made for suitable diet, bathing, outdoor air, exercise, and abundance of sleep.

(2) Investigation of conditions at home and in school to insure proper mental and moral training, congenial pursuits, and giving parents and teachers explicit advice.

(3) The correction of physical abnormalities, especially as

regards the teeth, eyes, nose and throat, genitalia, digestive tract, blood, and spine.

Pedagogical Co-operation.—In regard to the ethical and intellectual phases of the problem, the physician needs the aid of a good pedagogue, and for difficult cases, one specially trained in the psychology of childhood and adolescence.

Outdoor Provisions.—The writer believes that the proper environment for exceptional children is nearly always found outdoors. The *open-air school*, the *open-window or cloth-window classes*, are simple adjuncts to public or private schools, and may easily be applied in principle to one or more pupils under tutor or governess. The open-window and cloth-window classes are the ideal for all classes, and are inexpensive, involving no alteration in buildings. The open-air school is an ungraded class with not more than twenty members, to whom are administered carefully adjusted doses of fresh air, good food, mental and manual work, play, rest, and exercise.

School Routine.—Experience has evolved certain essentials in regard to the school routine and to the structure in which the school is located. So far as the day's programme is concerned, it is the ideal programme for the exceptional child indoors or outdoors, and subject to necessary variation it should be about as follows:

In the morning, on arrival, the children have pulse, temperature and respiration recorded; the hungry ones receive milk and bread, after which, as after all meals, they brush their teeth. After a cold shower-bath, an hour and a half is devoted to study; then comes a twenty minutes' recess of active play, followed by a half-hour of rest with music or out-loud reading. Then study is resumed for an hour until dinner-time. After dinner the children have a period of actual sleep, from which they are called to their classes for one or two hours. Before leaving in the afternoon, temperature, pulse, and respiration are once more recorded, and those desiring it may have bread and milk. In the case of poor children the school or district nurse should visit the homes to look over conditions, make suggestions, and take cases to hospitals or dispensaries; while among those in better circumstances the task falls to, and is usually neglected by, the family physician. Examinations of the children, stripped to the skin, should be thoroughly made at regular intervals, with

at least one examination of blood and urine, and such other laboratory work as seems necessary in each case.

Practical Conditions.—The success of an outdoor school depends in a large measure upon a few practical conditions. For example: It should be possible to enclose the school on three sides that are removable, or that contain windows. There should be a rain-proof roof and a dry floor. The open side must face the south, and along it is a broad windbreak, as high as the children's waists when seated, to keep off the cold winds from feet and legs; for it is impossible to keep the children warm if the feet are cold. Very heavy woollen suits with hoods, and felt lumberman's boots are worn in winter, and on the cots ready for the rest hour are several large army blankets, one beneath and two or more on top of each child. Close at hand there should be a warmed room for changing clothes, warming up the chilled, as a refuge from storm, and with a bathroom and toilet adjacent to it.

Results from Outdoor School Life.—The results from outdoor school life have been gratifying. This is especially true in the case of neglected children, the anæmic following acute illnesses, tonsil and adenoid cases, and children considered predisposed to tuberculosis. Good results have also been obtained in chorea, neurasthenia, hysteria, habit spasm, and uncontrolled, emotionally unstable children.

As a rule, no effort should be made to hurry the pupils through a grade, but rather to secure accuracy and quickness in the mental processes; and the teacher's tests will, with few exceptions, prove what progress of this qualitative sort can be made. Attendance and conduct ratings are higher than for the same children in the ordinary school. In addition there is a marked improvement in health indicated most graphically by an ascent in the weight curve. In a school under the writer's observation this gain in weight averages between seven and eight pounds for the nine months of the school session.

The first open-air school in this country was started ten years ago, and the records of each succeeding year, and of each new school have emphasized the therapeutic value of the method. About 15 per cent of them are for the tuberculous—the remainder, about 85 per cent, for children roughly classified as below par, as anæmic, debilitated, delicate, neurotic, backward, predis-

posed to tuberculosis, and including a variety of children for the most part included in the pseudoatypical and atypical groups.

Medical Treatment.—In addition to hygiene, the medicinal treatment must be briefly considered. Excepting the emergencies of acute illness, the use of drugs with these children is restricted to iron, arsenic, strychnine, malt, cod-liver oil, olive-oil, paraffin-oil, mercury, salvarsan, sometimes bromide, and not infrequently some preparation of the *ductless glands*. Among the last mentioned there are great possibilities as well as disappointments in their use in childhood; as for instance the use of thyroid not only for cretins but for children showing mental and physical anomalies that have a cretinoid tinge. The effect of thyroid on calcium metabolism has led to its use in rickets, faulty dentition, and nutritional disorders, *i. e.*, in conditions in which were formerly used thyroid-gland stimulants, such as calcium, arsenic, and iodine. Thyroid is of value in enuresis and eczema, provided it is used in small doses and in patients of a myxœdematous type, while with the alert and physiologically active type it is useless or injurious. In enuresis, the pituitary may act when the thyroid preparation fails. Pituitary, and sometimes adrenal medication relieves the constipation that is so troublesome in asthenic children. Thymus gland, and occasionally and paradoxically small doses of thyroid, exert a beneficent effect in children of the hyperthyroidal type—the type that in extreme form in older patients presents the clinical picture of Basedow's disease. Another stigma, not uncommon in childhood, is obesity, which, as in adults, is of two kinds: a flabby, sluggish hypothyroidal form that improves on thyroid extract; and a massive, sthenic variety that may be modified by pituitary administration.

Of the sex glands, ovarian substance will stimulate menstruation and uterine growth, while corpus luteum regulates the menstrual flow. In sexual infantilism, it is claimed that the use, singly or combined, of thyroid, thymus, pituitary, and, in the female, ovarian preparations, will induce normal development; and it is interesting, in view of the long-recognized relation between uterus and mammæ, to note that mammary gland will often control the flow of blood from the uterus (not in acute bleeding), and that ovarian medication will assist the growth of the breasts.

Suprarenal extracts are useful in asthma, and possibly whooping-cough.

The organs mentioned have been used for other purposes with varying results by different observers, and some of the statements made might properly be questioned. Many of the contradictory results of opotherapy are due to failure to recognize a truth that lurks behind the following theory: In administering one gland not only may *its* effects be elicited, but also those that follow the stimulation or depression by it of interrelated glands; and further, a glandular preparation may be given to replace deficient secretion, or in small amounts to act as a regulator of irregular functioning. An illustration of the first statement is the tonic effect of thyroid extract on ovarian function; and of the second, the astonishing result of light thyroid dosage in certain cases with symptoms of thyroid overaction.

Co-operation of Medical and Pedagogic Science.—Children with fresh tissues and sharper physiologic responses are better subjects than adults both for hygiene and for therapeutics. It is a duty, ethically and economically, to bring to the solution of the child problem, especially this aspect of it, every crumb of scientific experience. It is natural that physicians should emphasize the deviations from normal physiology in these exceptional children, and it is quite as natural that educators should lay stress on the aberrant psychology of them. But it is to be hoped that as mind and body travel in company in the child, so a representative of each may be found among those who guide him.

XV. DUCTLESS GLAND IRREGULARITIES IN EXCEPTIONAL CHILDREN AND THEIR TREATMENT

By DOCTOR E. BOSWORTH MCCREADY, Pittsburgh, Pa.

Importance of the Ductless Glands.—It is now generally conceded that the chain of ductless glands, comprising the pineal, pituitary, thyroid, thymus, and adrenals, is of the greatest importance in the development of the cerebrospinal and osseous systems in early life, and that impairment of function of one or another of these glands underlies many disorders of nutrition

which inhibit proper physical and mental development. While our knowledge regarding the normal action of these glands is still somewhat hazy, yet they are found, in some manner, to preside over certain correlations of the body. These correlations are exceedingly variable, and this variability is most apparent when and where circumstances are abnormal. The adjusting mechanisms of development are more or less reciprocal; thus a ductless gland not only influences development, but is itself influenced by changes in general development.

Various Functions of the Glands.—There is reason to suppose that in the harmony produced through the concerted action of the ductless glands, the leading rôle is played by the thyroid, which supplies the stimulus for bodily metabolism. As a check upon the influence of the thyroid in infancy and childhood, the thymus, the general lymphatic system, and perhaps the pineal gland also become active. These, in addition to their inhibitory action, produce that delay of sexual activity which is essential to the proper maturation and stability of the somatic functions. In due time the adrenal system stimulates the sexual organs to action, as well as hastening the growth of the muscular and skeletal systems. Of great importance at this time is the action of the secretion from the pituitary gland, which stimulates the development of every organ in the body. This much may be postulated regarding the influence of the internal secretions upon somatic development. Their influence upon psychic development is no less important.

Seldom, if ever, do we find a case of defective development in which the anomaly can be attributed exclusively to irregularity of action of a single gland. Even in cretinism there is some doubt as to whether hypothyroidism is the only factor, as this condition has been found accompanied by an enlarged pituitary. It may be stated that even in the acquired forms of ductless gland disorder, such as result from infection, trauma, new growths, etc., in a gland previously healthy, disturbance of one of the chain throws others more or less out of harmony, with resulting variation in development.

Ductless Gland Irregularity in Exceptional Children.—The majority of exceptional children in whom the condition is not due to purely environmental influences, present evidence of ductless-gland irregularity, emphasized often in one particular gland.

The involvement may be due to causes distinctly hereditary in origin, to antenatal agencies affecting the child *in utero*, or to a combination of these with exciting factors, toxic, emotional, or traumatic, operating postpartum. Thus conditions having a vitiating influence upon cell development, as tuberculosis, syphilis, cancer, alcoholism, chemical poisons, malnutrition, and environmental influences of various kinds occurring in the progenitors, result in imperfect growth of the development embryo. In the first few weeks of fetal life, when the ductless glands begin to appear, the cells of which they are composed also grow imperfectly; and failing to secrete to the extent to which they were destined, further defective development ensues, and we have as a result a constitutional inferiority, infantilism, hypoplasia, degeneracy—call it what you will—in varying degree. Of these terms I prefer “hypoplasia.” “Constitutional inferiority” is liable to confusion with Doctor Adolph Meyer’s more specific term, “psychic constitutional inferiority,” which is often used without the qualifying adjective. “Infantilism,” especially when qualified as “thyroid infantilism,” “pituitary infantilism,” etc., conveys the impression of a clinical entity. “Degeneracy,” from long misuse, carries with it a stigma of moral obliquity. “Hypoplasia,” on the other hand, seems to be a generic term admitting of wide application. Hypoplasia may affect any organ or any structure, and to almost any degree. Thus hypoplasia of the nervous system may give us the idiot as one extreme, and what is called the neurotic make-up as the other. The various stigmata of degeneracy are somatic manifestations of hypoplasia. Certain neuroses and psychoses, drug habits, alcoholism, etc., if not the direct result, are prone to occur in individuals presenting symptoms of hypoplasia of the nervous system in greater or less degree. Chlorosis, appendicitis, tuberculosis, and a host of other dyscrasias, diatheses, infections and morbid states are common in the hypoplastic.

The Hypoplastic Child.—The hypoplastic exceptional child is distinguishable from his normally constituted fellow through anatomic, physiologic, and psychic characteristics, the interpretation of which will implicate the glands of internal secretion as a factor of etiological significance. The clinical picture most often observed is the undersized, undernourished child whose unstable nervous system is still further handicapped by the effect

of disturbances arising from nasal obstruction, defective vision, phimosis, etc. These conditions are often erroneously considered direct causes of mental deviation. They are, in reality, evidences of the evolutionary hypoplasia which is the cause of the deviation. Other symptoms are: delayed epiphyseal union (as revealed by the X-ray), irregular dentition, and abnormalities in the growth of hair. Deficiency of the eyebrows in the outer third, the *signe du sourcil*, is considered a symptom of thyroid insufficiency. Enuresis is common. Frequently ptoses of the viscera are present, especially in the female, and postural defects are the rule in both sexes. Puberty may be delayed, the boy retaining the falsetto voice and bodily proportions of childhood, and the girl the "neuter" form lacking secondary sexual characteristics. There is usually a corresponding psychic insufficiency. The high-arched palate, produced by yielding of the palatine bones, due to relative poverty in calcium salts, is a fairly constant symptom of hypoplasia, and resulting dental malocclusions are frequently found.

The temperature is apt to be variable, subnormal at times with cold extremities, clammy skin, and chilliness, evidences of deficient oxidation and nutrition often due to hypothyroidism. Low blood-pressure, Sergent's white line, adynamia, sometimes with slight bronzing of the skin, and decreased resistance to infection point to underdevelopment of the adrenals. Anomalies of bony development hint at defective function of the thymus.

Deformation of the Sella Turcica.—The clinical study is not complete without a radiograph of the region of the sella turcica, to determine possible deformation of the structure with resulting dyspituitarism. The findings must be interpreted with reference to symptoms of disorder of this gland as well as their relation to other glands of internal secretion. A small sella turcica will often be found in children of retarded physical and mental development, exhibiting infantile characteristics approaching the Lorain type or the dystrophia adiposo-genitalis of Fröhlich. In some there is an enlargement of the clinoid processes, particularly the posterior, practically closing the space. This finding, almost constant in certain forms of epilepsy, confirms Johnston's observations.¹ I have also noticed it in children without epileptic

¹ George C. Johnston, "The Pituitary Gland in its Relation to Epilepsy," *Surgery, Gynecology and Obstetrics*, April, 1914.

history but presenting evidence of mental instability. I am inclined to believe that the deformation of the sella and of the clinoids is but another of the already long list of stigmata of degeneracy common in hypoplastic individuals, and that its association with epilepsy is more or less accidental, and that it acts as a causative factor only in so far as the resulting malfunctioning of the pituitary gland influences metabolism. The high neutral sulphur content which I have found in the urine of epileptic children with encroaching clinoid processes would tend to bear out this theory.

Treatment.—In the last few years a fund of knowledge has been gradually acquired that has placed organotherapy upon a rational foundation and furnished concise indications for the administration of definite gland substances in definite diseased states. While in the class of cases which we are considering the indications are not so definite and the administration must be, for the present, upon more or less empirical grounds, we are far removed from the crude empiricism of the days of Brown-Sequard and his overenthusiastic followers.

Though the most brilliant results have been gained from the use of thyroid gland there are many instances in which much benefit has apparently been derived from the use of preparations of other glands, and numerous such cases have been reported. As has been mentioned, it is seldom that we observe a case in which the anomaly can be attributed to irregularity of action of one particular gland, though there are numerous cases in which the symptoms involving one gland are more prominent. With a polyglandular condition to treat, the indication is for polyopotherapy. I am in the habit of administering to such cases small doses of pituitary, thymus, thyroid, and adrenal glands. For males, testicular substance is added; for females, ovarian and mammary substance. The usual result is improvement in nutrition, increase in growth rate, increase in blood-pressure, decrease of pulse-rate, and improvement in mentality. The thyroid should be omitted entirely or reduced to a minimum in cases showing the least evidence of hyperthyroidism. In this same class of cases of polyglandular disorder I have produced practically the same results in some cases by the administration of thyroid alone and thymus alone. Improvement following the administration of glandular preparations has been reported

by other observers. Thus, Dana and Berkeley have reported the results of investigations which they carried on under a grant from the Rockefeller Institute. Pineal extract was fed to a number of defective children in whom no grave organic brain defect existed. They believe that the pineal gland has a definite and important function, viz., that it promotes the development of the human nervous system, and they assume that it supplies a minute amount of intracellular ferment accelerating the growth of the gray matter of the brain. While in the cases which they report mentality showed a steady and gratifying improvement lasting over the whole period of administration, such improvement, as reported, was no more marked than I have observed in cases treated as outlined above. It is my opinion that improvement results from the stimulation of metabolic processes by bringing into equilibrium the various glands with their common, though tangled relationship, rather than through any selective action upon a particular gland.

When the symptoms pointing to one gland predominate, as in hyperthyroidism, hyperpituitarism, etc., the indications are more specific. I have known an apathetic, listless boy, who would take no part in the occupations of his school fellows, to be transformed in a few weeks by small doses of thyroid into a lively, mischievous youngster. A little girl of three years, short, fat, and stolid, who showed little desire to talk, was put upon thyroid extract with the result that her mother came to me a few weeks later with a request from the family that I give her something to stop her talking. Another patient of mine, a case of infantilism with symptoms strongly suggestive of hypophyseal insufficiency, gained one and a half inches in height in ten weeks (more, his father states, than he had grown in a year before) under the administration of pituitary gland.¹

Kerley and Beebe² report a case of retarded physical development in a boy in which treatment by thymus extract apparently gave brilliant results.

The efficiency of hormone-therapy is enhanced when it is pos-

¹ E. Bosworth McCready, "Study of a Case of Infantilism with Hypophyseal Insufficiency," *Illinois Medical Journal*, October, 1914.

² C. G. Kerley and S. P. Beebe, "A Case of Delayed Development in a Boy Treated with Thymus Gland," *American Journal of the Medical Sciences*, August, 1912.

sible to subject the patient to the hygienic and educational measures which modern methods of dealing with the exceptional child have shown to be useful. In child-culture as in horticulture it is intensive effort which produces results.

XVI. THE MENTALLY BACKWARD CHILD FROM THE STANDPOINT OF THE NEUROLOGIST

By DOCTOR M. NEUSTAEDTER, New York City

Children Far Below the Normal Standard.—By a mentally or intellectually defective child I mean one who is *far* below the normal standard as accepted by well-established intelligence tests. I say *far*, because in testing the mentality of a child several factors must be taken into consideration, namely the personal equation of the examiner, the home environment of the child, hereditary influences, and lastly whether the defect is general or only limited to certain tendencies. Thus, a child found to be one or perhaps two years behind his age, according to a certain intelligence test, I would hesitate to call defective.

The inability of a child to make appreciable progress under a skilled instructor within a period of at least two years ought to be an additional criterion of its mental defect.

Concomitant Factors of Backwardness.—What are then the concomitant manifestations of backwardness—what are its causative factors, and to what extent can it be ameliorated?

Frequently the concomitant manifestations are of a functional nature, such as various types of neuroses or psychoses; but in the vast majority of cases we find organic brain defects. Among the first I would include chorea, habit spasms, neurasthenia, hysteria, essential epilepsy, psychical equivalent, dementia præcox, and types of manic-depressive psychoses. In the latter I would put various types of infantile cerebral palsies with or without epileptiform convulsions, hydrocephalus, micro- and macrocephalus, cerebellar and tabetic ataxias, organic defects of the special sense-organs. We may also include here organic defects which, although not of the brain proper, are concomitant manifestations of the mentally retarded child. These are the infantile dystrophies and diseased ductless glands, which latter give rise to cretinism, infantile myxœdema, Mongolian family idiocy, infantilism, Basedow's disease, acromegaly and mixed types.

Etiological Factors.—The etiological factors are generally considered pre- or post-natal. They may arise as a result of trauma, of an infectious process, or again be the result of an affect, namely, of an inherited neuropathic or psychopathic constitution.

The most frequent traumatic influences are delayed labors or instrumental deliveries. These two factors are elicited in fully one-third of my cases, and that is in agreement with the reports of most investigators. Other forms of post-natal traumata are by no means uncommon and are present in the histories of cases attended by convulsions. I want to call attention here that psychical trauma, such as shock from fright, is a frequent exciting factor in the production of neurosis, and even a psychosis on a neuropathic or psychopathic constitution.

Of the infectious agents, the exanthemata take the first rank. Cerebrospinal meningitis, poliomyelitis, pneumonia, syphilis, and tuberculosis are very often recorded. Diphtheria and various streptococcic infections of the nose and throat and middle ear frequently give rise to meningeal involvement.

Both the traumatic and infectious agents produce inflammatory conditions of the meninges at the base and the convexity of the brain. If at the base, some of the cranial nerves become involved, and give rise to defects of the special sense-organs. Blindness will result when the optic nerves are involved, and deafness when the acoustic nerves are affected. Children surviving from basilar meningitis are very often deaf and blind. If the convexity of the brain is involved, we may deal with a hemiplegia, epileptiform convulsions, motor or sensory aphasia, either partial or complete. The ideational faculties may be dulled, or retarded, or completely destroyed. In cases where the communicating foramina between the ventricles are partially or completely occluded by inflammatory deposits, an accumulation of an exudate will lead to internal or external hydrocephalus. If the amount of fluid in the brain is sufficiently large to exert an undue pressure upon the brain-cortex, it is perfectly evident that we shall get diplegias, convulsions, and a very low mentality. Vision in such cases is always interfered with on account of the pressure exerted upon the optic tract.

Cortical and basilar hemorrhages are frequently produced by traumata. They also lead to depressions of the skull, which

press upon the brain-cortex. In these localized lesions we get focal symptoms in conformity with the place involved.

In case of syphilis I distinguish between infection and affection. In an *infection* by the syphilitic virus, the *Treponema pallidum* is inoculated. Such infection of the central nervous system will give rise to cerebral or cerebrospinal syphilis with focal symptoms according to the site involved. Blindness, deafness, convulsions, paralysis, ataxias, and even psychoses may result.

By an *affection* I mean a state of lowered vitality as compared with the normal threshold. This is the result of the chemotactic action of the toxins upon the protoplasm of the brain-cells, a pathological change in the normal molecular consistency. Such lowered vitality is inherited by the offspring without the virus producing such change. This affection manifests itself in what is commonly known as a neuropathic or psychopathic constitution. Alcohol and tuberculosis as well as syphilis are productive of such conditions. It is an accepted fact that such hereditary taints are transmitted from generation to generation. In progenies of consanguineous marriages, in whom there are such deleterious factors, these deteriorating manifestations are brought out more promptly and certainly. Upon such a neuropathic or psychopathic constitution psychic or physical traumata or infectious diseases will engraft some form of mental deterioration and thereby render the mind decidedly unstable if not exactly insane.

Alcohol, even in small quantities, frequently used, affects the protoplasm and therefore the entire system. It lessens the absorption of oxygen by the red blood-corpuscles and the exhalation of carbon dioxide, thus producing a toxic condition. It not only diminishes the powers of resistance but favors the growth of pathogenic organisms. It also inhibits to a great extent the metabolic changes in every organ of the body.

The decrease or increase of mental disorders and crime are shown by statistics to be in direct proportion to the rise and fall of the consumption of alcoholic beverages.

Since the mother has a greater share in the life and care of the child maternal alcoholism is of far greater danger than the paternal. It has been proven again and again that the earlier in her pregnancy a woman takes to drink the more certain will

be the debility of her offspring. Among others, Bourneville made a close study of 2,555 children who were classed either as idiots, epileptics, or imbeciles, or who suffered from some form of neurosis, and of these he found that 1,053 had an inebriate parentage. In 933 it was paternal; in 80, maternal, and in 40 it was traced to both; 235 were conceived during paternal drunkenness.

We may therefore conclude that parental intemperance, if not itself due to a neurotic heredity, and especially if emphasized by disease or privation, certainly produces a marked influence upon nutrition and causes mental and physical degeneration, both in parents and offspring, in other words is productive of a neuropathic or psychopathic constitution.

In *tuberculosis* we also deal with a toxic condition that ravages the tissues of the parent and produces not only a diminished resistance to the infection, but gives rise to imperfect bodily development of the child. It may not be the tubercle-bacillus that the surviving offspring inherits, but the so-called scrofulous condition—a degeneration due to a toxæmia. Such children show manifestations due to an underdevelopment of various tissues, never reaching the norm, and thereby also a low threshold of their functions. One notices a subnormal body weight, a positive sign of lack of proper nutrition. The skin is spongy, pale, rather inelastic, and yet not tense. The muscles are as a rule flabby and weak, prone to fatigue easily, and to become exhausted. The swelling of the lymphatic glands is a constant accompaniment. These are constant signs of a scrofulous diathesis, and as the children get older they develop various organic diseases of the viscera and bones characteristic of a faulty nutrition. Hand in hand with that goes a mental backwardness in various degrees from a mere retardation to a complete imbecility.

Syphilitic affections, as stated before, do not yield symptoms of an infectious process, but rather of a constitutional inferiority. And yet the fate of such a child may be as dark as that of an infected one. Its general physical development may also be retarded, or even markedly inhibited. Agenesis, aplasias of various tissues, especially of the central nervous system, are met with in no rare instances. Dystrophies are now regarded as due to such aplasias. The cells may possess a weak power of re-

sistance and fatigue rather early in life, succumbing easily to the very onerous tasks required of them in the daily discharge of their functions, unable, as it were, to proportionally assimilate new food and replenish energy as easily as lost. Many authors also believe that the toxins of the syphilitic virus cause organic changes in the various elements of the central nervous system, the ganglion-cells, their prolongations, and the glia-cells. The vessels do not escape injury altogether. An obliterating endarteritis or a gummatous periarteritis with consequent areas of softening are not uncommon. Such is the anatomical basis of various juvenile psychoses.

Finally we come to consider the *diseases of the ductless glands*. The secretions of these glands contain chemical substances which profoundly influence the bodily functions. According to one theory they enhance the assimilation of food and thereby influence growth, and according to another one they are supposed to be germicidal and neutralizers of toxins, and thus are a preventive to toxic destruction of tissues. Whatever theory may prove to be the correct one, it has been established experimentally and clinically that whenever the balance of these internal secretions is upset by a lesion in any of these glands there result diseases which give rise to definite clinical manifestations. Just as the various organs are influenced in their nutrition, and therefore in their growth, so are the functions of the central nervous system profoundly influenced in the same ratio. All children suffering from any defect of the ductless glands are mentally below par. It matters not whether we are dealing with the hyperthyroidism, giving rise to the syndrome of Graves's disease, or its antagonist hypothyroidism resulting in cretinism, infantile myxœdema, or again hyperpituitarism with the syndrome of acromegaly, or that of hypopituitarism with the symptom complex of infantilism, imbecility, or even idiocy. Mental backwardness is a constant manifestation. Of course, the degree of the child's backwardness depends entirely upon the extent of involvement of these glands. The particular etiology of these affections is not definitely known, but many investigators have been able to demonstrate that alcohol, tuberculosis, and syphilis play a considerable rôle in their production. It may not be amiss to state here that enough attention has not been given to the *defects of the ductless glands as a possible etiological factor in the production of the back-*

ward child. I am inclined to place the onus upon them whenever I am unable to elicit any other factor in the absence of focal symptoms that would point in another direction.

Amelioration of These Conditions.—From what I have said before it is evident that the possible amelioration of such conditions may best be accomplished by *prophylactic measures rather than curative*. It would be impossible to enter upon an extensive discussion in this paper, but a few general remarks may prove of value.

The education of the public in *eugenics* is the important phase of prophylaxis, but our public servants must strive to create *ideal social conditions*. The wage-earners who are the great bulk of the social organism should be given a chance to live in ideal homes as well as to make a fairly comfortable livelihood under ideal conditions, in the factory.

Consanguinity in marriage should be restricted by legislation to a far greater extent than is done by any church or creed. It should be made compulsory for any one applying for a marriage license to undergo a thorough physical examination by expert observers. The Wassermann reaction should be resorted to in every case.

As the production of these unfortunates is not limited to any particular class of society, but is the result of the outcroppings of vicious and defective tendencies in all ranks and classes, including the highest, where the black sheep of the family does not come merely by chance, the *avoidance of injudicious matings* of those who are utterly unfit for the propagation of healthy offspring is imperative.

So far as *curative measures* are concerned, they must be *both medical and educational*. Hygienic surroundings and proper, nourishing, and easily assimilable diet are the most important prerequisites, and along with them, proper medication as the case demands. In cases which are still amenable to medical treatment, this will do a great amount of good. This is especially true in cases of syphilitic infection. Alongside with this an individualizing, not specializing, pedagogue, one with a keen power of observation and fairly well equipped with a knowledge of psychology and anatomy and physiology of the central nervous system, will materially aid in bringing order out of chaos. All this must be attempted early if success is to be attained, for as

the child grows its brain-cells adjust themselves to their environment, and to begin late would mean to attempt the impossible.

Conclusion.—In conclusion I would say that each case must be studied as an entity by itself, and we must minister to its particular needs as the case may demand. As to the general prophylactic measures which I have pointed out, I would say that they seem to me to be very simple and not at all costly, and if realized by our educators, social workers, physicians, and legislators they would find a perplexing problem well in hand.¹

XVII. CARE OF THE NEUROTIC AND PSYCHOPATHIC CHILD

By DOCTOR FREDERIC J. FARNELL, Providence, R. I.

Infantile Roots of Adult Psychopathy.—There is probably no phase of modern psychopathology so interesting or so legitimately one of general concern and attention as that which deals with mental development of the neurotic and psychopathic child. The importance of this early period of development is steadily gaining recognition, yet, just how far and just the reason why adult mental abnormalities are the distortion of memories of childhood experiences is still a matter of individual opinion. It has been stated, nevertheless, that since infantile roots are rarely lacking in adult mental derangements, the study of an adult might be viewed as "child study."

The Make-up or Personality.—Chief among the conditions one must keep in mind is the period of moulding the child, observing especially those different elements which tend toward the make-up or personality. A knowledge of growth is necessary for the understanding of the matured state.

Just as the personality or make-up of the mentally afflicted individual is the result of a process of growth, so it is in these types of children—the beginning of a process of growth. The

¹ Doctor Neustaedter's views differ in several points from those presented in this book, in the general conception of the problems of heredity and of prophylactic measures. He offers, however, from his great fund of experience, so many valuable suggestions and indisputable facts, that the author is happy to have him among his contributors. It is well, anyway, to give space here to a statement from a scientific representative of another point of view. In most points, he corroborates the main contentions of this volume.

child must be recognized as a collection of forces, and he should be studied from the dynamic rather than from the static standpoint.

Unconscious Elements.—One must take into consideration, however, inborn tendencies, impulses, and instincts. There are also forgotten and unrecognized psychical contents which have not been brought into the actual existence of the memory. They are in close relationship to unconsciousness; they also bear a relationship to conscious ideals and efforts, but owing to the presence in consciousness of opposite ideals and efforts they are repressed from consciousness. As a result of this exclusion from consciousness the content of the unconsciousness can be revealed only by its consequences.

Early Repressions.—In the first five to seven years of a child's life, during which time he is almost entirely in the home receiving his training from his parents, associations are made which, by the poor co-operation of the parents or guardians, may be repressed, not only offering the possibility of an early neurosis but also offering seed for disturbance of his whole life. Every repression, even in a child, means a further hindrance of mental development. Various authors have used the term "fixation," or the driving and encouraging of faulty mental habits along a pathway which it would not otherwise have followed, especially so should it not meet with the interest of the child. The repression of one mental content is naturally followed by the suppression of other mental processes, even those which may be of use in balancing the individual.

For example: Take a child who expresses himself along a certain line—saying he has not done or said such and such a thing, which was later demonstrated to be a lie. Should it be regarded immediately as a lie, and the child punished accordingly, one only succeeds in demonstrating to that child the mental conception of a lie of which he might otherwise have remained in ignorance. It should be remembered that the unconscious factors in falsifying play a far greater rôle in the child mind than may be supposed. The punishment of such a child is liable to create direct antagonism toward that parent, which antagonism may become hatred or distrust according to the deceptions the parent may have given the child when he was in earnest search for truth. There is no question which will stimulate a query in a child's

mind more than that to which the answer "not to speak of such matters again" is given.

Relations of Parent and Child.—It should not be at all surprising to hear the emphasis laid upon the relations of the child to parent or guardian; their relationship is of marked significance. The formation of love attachments to mother or father should be guarded, and the most careful attention given to the proper purifying of instinctive tendencies as they may become manifest. One should not be too strict or too tender with the child. Too much affection or too severe corrective measures may be influential in producing an early sensual manifestation in the former, or a serious disturbance in temper in the latter. With the former, love attachments become stronger and manifest themselves in later years in various peculiarities of character. In the latter, love attachments weaken, desires are converted and energy discharged in defects in conduct, such as cruelty toward animals or individuals. The many other psychical and mental abnormalities can frequently be traced to an early infantile fixation or an erroneous attitude toward a parent.

Interpretation of Misconduct—These conditions having developed, helpful measures should be instituted and the child carefully analyzed. This method of handling this particular type of child has met with excellent success in the hands of such men as Doctor Pfister of Zürich and Professor Healey of Chicago. It resolves itself into the interpretation and explanation of misconduct and bad behavior as faulty mental habits following early childhood experiences. Its value is dependent upon the uncovering and tracing back the formation of the child's character, readjusting the individual and placing such props as may be necessary as balancing factors.

It is of great importance to obtain the patient's version of the defect present, and then retrace its development in and out of the consciousness, recalling by free conversation latent memories and laying bare the unconscious as far back as possible, even to 3 or 4 years of age. One never realizes the vast amount of forgotten memories and experiences that can be readily and easily recalled through psychological analysis.

Method of Handling Patient.—One must consider, however, not only the reminiscences and forgotten memories, but also the setting in which they occur, by the careful handling of the pa-

tient's resistances and affording a proper transference whereby an adequate affective reaction may be obtained. This constant forcing of memories and making the individual reveal all thoughts, whether in relation to the initial defect or not, forces every connection in mental activities to become manifest. There is not merely one string of mental events to observe but many, and each séance adds more to the accurate guidance which is necessary to give proper weight to them. These individuals are usually erroneously informed upon many subjects, and appear to be "all mixed up" and entangled in a mass of creative misapprehensions. At these points a careful reversion, which as a rule they do not wish, is only successful by tactful questions and a perfect understanding of what they themselves mean, readjusting as well as possible without offering too many suggestions. Once they observe that their thoughts are interpreted as false knowledge additional resistances crop up and offer more barriers to the examiner.

As the analysis progresses, however, the resistances lessen, and a time soon approaches when the unconscious thoughts flow freely which, with the help of dreams, allow the synthesis of the misbehavior or faulty mental habits. Much of the personality of all these individuals is below the threshold of consciousness.

Correction of Faulty Mental Habits.—It is thus seen that by the process of analysis faulty mental habits may be corrected, the demands for certain lines of thought and action may be planed down to a fair degree of smoothness and that the fearful emotional disturbances so common as a result of inner associations and dream states may be brought into their real light. These elaborate methods in dealing with the actual facts of physical and mental experiences enable one to interpret and formulate adjustments in the cases of bad behavior and conduct disorders.

XVIII. A BRIEF STATEMENT OF THE TREATMENT OF THE PSYCHOPATHIC PERSONALITIES OBSERVED IN THOSE WHO DEVELOP DEMENTIA PRÆCOX

By DOCTOR HOWARD A. KNOX, Ellis Island, N. Y.

Predementia Præcox.—My experience in the treatment of these personalities has not been extensive and it is largely theo-

retical, but I do believe that the atypical make-up which we so constantly see in those who develop dementia præcox, will be the subject of fruitful endeavor in the future. Unfortunately at the present time we seldom see the individual until he has shown definite signs of insanity. Adjustment and an explanation of the psychic mechanisms involved is then a more or less useless endeavor. Any efforts of a prophylactic nature must necessarily be made in the stage of predementia præcox, that is, before the onset of a definite psychosis.

Four Types of Personality.—We commonly see four types of personality quite constantly in our cases, and the first of these to be mentioned is of most importance and the one most commonly seen. They are the following:

(1) The shut-in personality, or, as it is sometimes called, the seclusive make-up.

(2) The overvirtuous, or, as they are commonly called by their fellows, the "goody-goody" type.

(3) The lazy child who is lacking in energy and ambition.

(4) The changeable or easily influenced type.

In girls, there is often a tendency toward early immorality. I have called the latter type, the facile type.

Influence of Adolescence.—Experience shows that the psychosis most often comes at the beginning of adolescence, at which time the individual is called upon to assume the duties allotted to him by nature. The shut-in type of personality is the one with which I have had the most experience. In these cases, the individual is of a retiring, bashful, uncommunicative, and lachrymose turn of mind. There is often a definite mother attachment in the case of boys, and a father attachment in the case of girls. They dislike the opposite sex, do not play or associate with them, never have a serious love-affair, and frequently are given to masturbation. It may be said here that the prevailing idea regarding the latter symptom is that it is of etiological importance, whereas it is only a symptom of the underlying condition.

Causation and Type.—The theories of the most prominent authorities on dementia præcox, viz., Kräpelin and Bleuler in Europe, and August Hoch and Adolf Meyer in this country, have given us by the combination of their work an excellent insight into the causation and type of individuals who develop this disease. The causation remains on a somewhat theoretical basis,

but the personality is now a quite well-established fact, thanks to the researches of Hoch.

Toxic Origin.—It seems probable, judging from the results of the work of these men, that dementia præcox has a toxic origin with a superimposed psychosis of psychogenic derivation. From the researches of Meyer it would seem that these persons present constitutional characteristics from earliest childhood that later develop into the usual symptoms of dementia præcox. From the results of Hoch it is apparent that these individuals present certain constant and definite traits that brand them as liable to develop this disease.

Prevention of the Disease.—Starting on these premises we are in a position to begin to think of the prevention or prophylaxis of this most dreaded of psychosic entities. If the individual possesses such marked prerequisites that he will develop the disease in spite of any measures taken, then treatment is of course useless. If, however, he possesses a less marked susceptibility, we may hope for some results if taken early. The time for treatment is evidently in the preadolescent period. If there is a toxic basis for the condition, further study will be necessary to determine what this is. The time of onset would indicate that there might be a deficiency or an overproduction of the hormones supplied by the glands of internal secretion that are called into play when sex life begins. If one of these theories should subsequently be verified, the treatment would be obvious. If the condition depends more especially for its origin on psychic maladjustment, then explanation of mechanisms, possibly including psychoanalysis, might be of considerable value. It is in this direction that I have already made some endeavors. It will take years to determine whether or not these have been effective, and even then I shall not know with certainty that the cases would have developed dementia præcox if it had not been for my efforts.

It is probable that the intelligent, ingenious neurologist and psychiatrist could map out a life programme for these predisposed children that would enable them to adapt themselves to the demands of life. It would be quite useless to ever expect them to marry successfully, but it might be possible to sublimate their energies in other channels and thereby procure harmony for them and usefulness for society.

It seems to me quite reasonable to believe that a much earlier residence in a well-conducted institution might be of service, in other words, that if the predisposed person could be selected with certainty and turned over to competent medical men and placed in the well-ordered routine of a first-class institution, free from the strifes and cares of the world, they might be tided over the dangerous period and saved to themselves and their friends and thus spare the State the burden of the expense of their incarceration and their friends the sorrow incident to their plight.

I offer these suggestions as much in the hope that they may be the basis of fruitful research as I do in the hope that they may benefit the individual prepsychotic. To those interested, the works on dementia præcox of the above-named psychiatrists are recommended.

XIX. THE MEDICAL TREATMENT OF EXCEPTIONAL CHILDREN

By DOCTOR TOM A. WILLIAMS, Washington, D. C.

Causes of Deviation from Type.—Deviations from type may be due to the peculiarities of the germ plasm (1); or may be the result of disease after the formation of the embryo, no matter whether before or after birth.

Those differences from the normal which are occasioned by the actions of parasites, or caused by gross injuries will not be considered in this paper; for to do so would require text-books on medicine and surgery. To consider in detail the anomalies of the apparatus of vision, hearing, posture, digestion, and nutrition in children would not be possible in this volume. What is most necessary to be said on these subjects is presented in other contributions to this symposium.

What is not well considered in text-books on pediatrics is the *psychopathology* (2) of the child; and the directions concerning the physical hygiene of the neurotic child are usually perfunctory, conventional, and guilty of sins both of omission and commission, especially regarding study, exercise, play, and food.

Accordingly, there will be considered in this paper:

First: Some of the physical causes which produce neurotic behavior.

Second: The chief psychological sources of disturbance to child life.

A. Physical Causes:

I. Insufficient air and improper clothing, viz., too tightly fitting.

II. Incorrect food and drink.

III. Inadequate or improper exercise of body.

IV. Imperfect elimination.

V. Disordered glandular action.

B. Psychological Causes:

I. Mismanagement of attention.

(a) Inconsequence of thought and action, self-control, suggestibility.

(b) Its contrary: oversustained attention. The sequences.

II. Mismanagement of emotion and sentiment, desires and inclinations.

(a) Intemperance.

(b) Its contrary: overrepression.

(1) Affection. Altruism. Religiosity.

(2) Anger. Pugnacity. Sulkiness. Hatred. Dislike.

(3) Fear. Anxiety. Scruples. Obsessions. Shame.

A. Physical Causes.—I. *The Air*.—Fretfulness after meals or after play is very often due to the improper atmosphere surrounding the child. It must not be forgotten that the heat production in a child is very active, and his need for oxygen much greater than in the case of the adult. It is only prolonged exposure which is dangerous in the case of children. But even the chilling of the extremities by exposure may not be detrimental if the trunk, especially the abdomen, is kept warm. The sensations of a sedentary person with poor oxidation are a very poor guide to the qualities of the atmosphere to be breathed by young children.

The thermometer is, of course, no guide, as a warm air may be quite pure, and a cold air may be most noxious. Perhaps the best guide is the sensation of a sensitive individual returning from brisk exercise in the open air. If foulness is noticeable to such a person, the atmosphere is injurious to a delicate child. The best way to secure proper ventilation is the opening of windows from the top, with cross ventilation. Many of the mechanical installations for changing the air are adequate only when a

small number of persons are present. They are incapable of dealing with the discharges from a crowded room.

People who pooh-pooh what they call the fresh-air fad should have their attention directed to the great advantage of the open-air cure of tuberculosis, pneumonia, and run-down conditions.

II. *Incorrect Food and Drink*.—Some of the essentials of a healthy dietary are lacking in the régime of a great many children of our day.

To insure sufficient bulk in the intestinal canal an adequate amount of solids must be taken. If this is solely composed of digestible material, far more nutriment than can be advantageously assimilated must be consumed.

Now, much of the food given children has been deprived of its indigestible constituents, the husks of fibre and cellulose. We are in the age of pap. Hence the child to get enough bulk eats too much. The sophistication of the food, furthermore, deprives the child of the opportunity to exercise its teeth; in consequence the jaws and blood-supply of the teeth are imperfectly developed, and caries is apt to ensue. (Sim Wallace.)

But there is a third disadvantage of what is literally an emasculation of food. In the process of refinement unfortunately the food is deprived of mineral salts, especially phosphates, and what are known as vitamins, that is to say, protein (3) materials in very minute amounts which are necessary complements of the larger amount of better-known constituents in nitrogenous food.

In consequence of the sophistication of the cereals, reliance for body growth is placed upon eggs and meat, and in the earlier years on milk. The objections to these foods are not only economic. Flesh contains considerable purin-producing (4) material and putrifies easily. Eggs rapidly undergo poisonous disintegration, and the albumen is too concentrated to be a good food for a species which is constituted as a mixed feeder. Milk is a food only for babes, unless especially prepared.

The best diet for a neurotic child, or any child for that matter, is a plentiful supply of such cereal foods as are prepared from entire wheat and oats, supplemented by an abundance of fruit, especially the banana, the sugars of which supply energy easily, and the saline constituents of which favor the rapid metabolism of childhood. The proteins of Indian corn, barley, and rice are not in themselves sufficient for active growth, but must be sup-

plemented by others, such as are found in wheat or oats, or in flesh, eggs, and milk.

We are just beginning to learn about the intimate constituents of some of the proteins. Further study should enable us to substitute for the inadequate corn and bacon ration of the farm something less expensive than the abundant mixed dietary which is now being used in treating pellagrins. For instance, the nutritional disease beri-beri can be prevented by the addition to the food of an infinitesimal dose of a substance obtained from rice bran, although the disease otherwise occurs in persons fed on milled rice.

The psychology of children's appetite, inclinations, and fads about feeding is very important, and will be considered in the section on psychopathology.

III. *Inadequate or Improper Exercise*.—Rickets, usually regarded as a nutritional disease, is by some thought due to lack of exercise of poor children in cities kept off the streets for fear of accident; or of richer children paraded in perambulators by thoughtless mothers. All young mammals exercise very actively; it is in their play that they develop. Children in cities, however, have so many inducements that they are apt to fall into sedentary or loafing habits. Hence it is important to somewhat systematize and supervise the play of children in these days; for on account of the restrictions of civilization their play has to be somewhat artificial, and is often too complex for the child capacity to manage. Sad to relate, it has become difficult for the child to play; and the difficulties are sometimes too great to surmount except by the most adventurous spirits. These facts are especially important for the parents of an exceptional child; for to these handicaps will be added the stresses of adaptation to his fellows whose unlikeness to himself may still further discourage his inclination to play, and thus prevent the proper exercise of his body.

Not the least important function of exercise and play is its value in psychological development. This will be discussed in the section on psychopathology.

IV. *Imperfect Elimination*.—Constipation, as is well known, has serious consequences. To avoid these, drugs which stimulate the movements and secretions of the intestines have been greatly used. The relief afforded by them is so rapid that the

laity—and many physicians—have shortsightedly countenanced the frequent use of aperients, seeking only to find one which will have no weakening effect on the bowel. Of course, such a purgative does not exist, because every artificial stimulation must be followed by a reaction which makes the condition of affairs worse than before. For a long time cascara sagrada was preferred, having superseded the rhubarb of our grandmothers. Now the fad has become Russian mineral oil, recognition of the failure of cascara now being general. The objection to mineral oil is that it prevents the access of the digestive fluids to the food particles by coating them with an entirely insoluble substance. If purgation by lubrication is sought, an organic fat, such as olive-oil or cream, is very much better.

But the proper way to prevent constipation is to adopt the principles given in the paragraphs concerning food and drink. For such principles give a proper residue with which to distend the intestine without at the same time furnishing an amount of putrescible matter much greater than can be rendered innocuous by the digestive juices.

The most important eliminating organ is the kidney; but when this is disordered a physician must be consulted.

Elimination by the lungs takes care of itself if proper air is provided and clothing is not too tight, and if the respiratory passages are kept free. This demands examination of the nose and the back of the throat by a physician, and the escape from catarrh by good hygiene and the avoidance of contact with persons infected with catarrh.

Elimination by the skin is favored by proper bathing and changes of clothing, and the avoidance of too closely woven or heavy underclothes. Regarding bathing, indiscriminate advice has done much harm. The morning cold bath, erected into a fetich in England, does much harm to some constitutions. The danger of chill after a tepid bath is very great; but if a bath is taken very hot and remained in until the skin is thoroughly permeated by the heat, leisurely cooling while dressing will prevent active perspiration which would cause liability to chill. The delicate child or neurotic child is unusually susceptible to the effects of heat or cold, or both, and his bathing habits should be determined upon only after careful observation of his constitution, preferably by a physician conversant with nervous children.

They should not be imposed arbitrarily according to a hard-and-fast rule. The same remark applies to bathing in the sea or river. For while nothing is more beneficial even to a nervous child than swimming, yet some children are quite incapable of withstanding the great vasomotor strain of sea-bathing in such a temperature as is afforded by the coast of Maine or the North Shore of Massachusetts.

V. *Disordered Glandular Action*.—The relation of the glands of internal secretion to the functions of the nervous system is very important. We know already a great deal about the thyroid, adrenal, pituitary, the thymus, and the parathyroid glands in relation to nervous disorders. The consideration of the subject is, however, very complex and a purely medical matter not suitable for a full discussion here.

A few remarks, however, may show the kind of symptoms which should lead to medical consultations for the child.

Pituitary Disorder.—A girl of 11 (Case 82) was brought by her mother because of loss of interest in her lessons, of which she had previously been very fond; grimacing of the face in spite of all corrections; equivocations and fibbing in attempts to evade her duties, and greediness amounting to gluttony. She had always been a stout child, but had become enormous during the preceding year or so.

Exploration of a possible psychological cause for this change of behavior was fruitless; so psychomotor exercises were begun for the facial tics. The only effect of these was to arouse the patient's resentment, and they were not persevered with.

Some time after, great somnolence manifested itself, the child becoming very lethargic and even dropping off to sleep in the middle of a task or at the table for a few moments.

This directed attention to the function of the pituitary gland. So this was immediately explored by the levulose test. As this showed great increase of the tolerance of the system to large amounts of sugar, it was decided that the pituitary gland was functioning insufficiently: great increase of weight, torpor, psychic inadequacy and its attendant changes in behavior being symptoms of lack of pituitary secretion. Feeding with increasing doses of pituitary gland was at once begun.

The child recovered completely in a few months, and after the onset of puberty was able to dispense with the pituitary

gland; now four years later she is active and comparatively thin.

Thyroid Disorder.—Excessive secretion by the thyroid gland causes restlessness, excitability, moist skin, rapid heart, and malnutrition. It is apt to occur in a slight degree near puberty, and although it may disappear spontaneously after that, it often persists. Thus it is only prudent to take medical advice when the foregoing symptoms appear in one's child.

Deficiency of thyroid secretion is shown by many symptoms, the most noticeable being sluggishness of body and mind, coarseness of body and hair, thick voice and stunted growth. Cretinism is only an extreme degree of this. Hypothyroidism, as it is called, is easily met by feeding with the thyroid glands taken from animals and appropriately prepared.

Adrenal Disorder.—What is commonly called weak circulation, cold extremities, incapacity for severe exercise or sustained work, and a general feebleness with lowered resistance to infectious diseases and other causes of illness may arise from a deficiency of the adrenal gland. In case of any such child this possibility should be carefully looked for by a physician conversant with the symptomatology of the diseases of the suprarenal gland.

Thymus Disorder.—Children subject to croup, of pale, flabby constitution, poor resistance to infections and poisons, and apt to die suddenly during anæsthesia, show an enlargement of the thymus gland, a condition which can be quite successfully dealt with medically.

B. Psychopathology.—**I. Mismanagement of Attention.**—Attention is directed by motive, and motive is excited by interest. In beings without memory, such reaction as movement, interest, attention, are each subject to immediate activation by whatever presents itself. The power of recollection enables experience to be utilized in the accumulation of motives or interests. These are simply the selection from the environment, of the activities of which, of course, thought is not the least. What interests shall be sought is a choice determined by two kinds of factors. The first of these is inherited disposition which will not be considered here as we are now concerned with children already born, and not with eugenics. The second factor of choice comprises the influences which shape behavior, more es-

pecially those exerted in early childhood. In human beings these are of paramount importance, although they are innumerable and often unmanageable. Still in the degree to which they are understood and scientifically utilized do we have a proper education as against a haphazard one, which, however, is sometimes successful by virtue of the child subjected to it being influenced by episodes which determine his course in fruitful direction.

The character of the individual is a composite of psychological trends, and each of these is acquired by virtue of the cultivation of the attention toward each.

A young infant will follow any bright object placed before it or any sound; an earnest student concentrated on his task does not notice the noises in the street, nor the moving objects there: his attention is elsewhere, as we say.

A boy, even though preferring to think of what is going on in the playground, yet keeps his mind on his task from a more powerful motive, no matter whether this be a desire for accomplishment, or a fear of failure or punishment. I need not enlarge upon the familiar directing of the inclinations away from pleasure which is comprised in the accomplishment of the tasks required for the cultivation of a handicraft or profession.

But in the case of very young children the need of direction of the attention and guiding the inclinations is even more important.

It is to the ignorance or neglect of this principle by parents that neurotic behavior is often due.

The degree to which cultivation can be carried by an intelligent direction of attention is illustrated by the famous case of John Stuart Mill (**Case 14**) who could read Greek when 4 years old, and could have entered the university at 6, in consequence of his father's ingenuity in interesting him in subjects usually studied at a much later time of life. That Mill was not a "*lusus naturæ*" he himself frequently affirmed. This we can readily believe as modern instances are not uncommon. Most people are familiar with the story of William James Sidis (**Case 40**) who knew much of human anatomy at 6, entered Harvard at 11, and is professor of mathematics at 18.

The manifold accomplishments of Winifred Stoner (**Case 18**) are familiar to newspaper readers. Young Wiener (**Case 17**) is only another among many American instances of to-day. Quite

apart from the advisability of such precocity, they all were possible by virtue of the same principle, viz., a directing of the attention and interests. They go to show how very ductile is human material.

Results of Inattentiveness; Hysteria.—In the absence of direction of attention the child wanders from matter to matter aimlessly. The misfortune of this is not so much the lack of learning, but the fact that he does not learn to concentrate his attention, and to master a temporary disinclination for the sake of an ultimate satisfaction. *Study in a child is of far less value for the material gained than for the habits of thought acquired; not the amount, but the method is the important matter.* A coherent, consistent plan for mentally occupying the child is particularly important if he is neurotic, especially if hysterical in tendency.

This word (hysterical) is used to denote the type of individual prone to uncritical acceptance of the environment, and in consequence easily influenced, in a word: oversuggestible. Such persons later in life become prone to imaginary ailments; for these, they are apt to seek relief at the hands of charlatans. They comprise a large part of the following of the new movements in which shibboleths so often take the place of thought. If there is a pragmatic sanction for a cult of this kind, it is sure to attract a large number of these uncritical individuals, for most of these belong to the class of "practical," unimaginative people. That is to say, their imaginations remain crude, lacking breadth to develop a cultivated imagination like that of the poet, statesman, or man of science.

It is by suggestion, of which imitation is one avenue, that various fads and dislikes concerning food and drink are acquired. The following case is an illustration of the degree to which ideas can carry even a child to whom, as a rule, the appetite for food is paramount.

Hysterical Anorexia.—In January, 1912, a child aged 11 (Case 83) was referred by Doctor Jung, who had been treating her because of dyspepsia and a capricious appetite. During the preceding three years she had left school three different times because of her health; the only occasion on which a definite disease had occurred was six weeks before she was sent to me, a slight operation upon an infected corn. After this she had been dieted by Doctor Jung, and seemed to improve for about two weeks;

but during the week preceding my consultation she had lost one and a half pounds.

Anamnesis.—Upon going to bed she feels sick and weak, and pains shoot all through her. She has had a constant headache for several months. When she feels ill, she is very peevish; and she felt homesick for playmates as she had made no friends in Washington, where she had only been a few months. Instead of playing she sat or lay about most of the day, feeling too tired to fetch her books for reading, of which she was formerly very fond. She had also been fond of games formerly. She had had glasses since the age of 8, but had not worn them until lately. Her appetite was very poor.

Examination.—Showed rather feeble reflexes. Motility less vigorous than normal, especially in the ankles; the feet flat, but not pathologically so. Unskilful diadocokinesis; a tic of the shoulder; and much wriggling; normal sensibility.

Psychologically there were no intellectual abnormalities nor marked emotional reactions except that the little girl wept when it was proposed to take her away from her mother and father to the hospital. The mother had been very conscientious in her upbringing, and this had reacted on the child before whom far too much attention had been shown regarding both manners and physical welfare. Conversation before her would frequently concern the appropriateness of different foods and their digestibility, and the atmosphere of the home was one of solicitude about the child's health.

As an infant, she was not retarded; she had been apt in school except in writing, when her hands would jerk; but they did not do so in sewing, in which she was skilful. Her bad writing in school disturbed her, and she would become "hysterical." Respiratory infections were easy and frequent, as was the case with her father. Perhaps this was accountable to mouth-breathing; for this, adenectomy was done when she was 8.

Diagnosis.—As Doctor Jung assured me that the stomach functions were performed quite well, and that he could detect no physical disorder of the digestive apparatus, and as the condition for the implantation of an *idée fixe* was apparent, and as conversation with the child herself corroborated my suspicion of this, it was evident that we were dealing with a case of hysterical nosophobia. By this is meant a fear of disease implanted

by suggestion, a matter very easy in young children and uncritical people in general. But it is quite exceptional for food and appetite to be the subjects of a phobia in so young a child; for in the child the vegetative functions and instincts are usually paramount.

While in Paris in 1906-1907 I saw one other case of this type of false gastropathy in a young child (published by Déjérine since).

Treatment.—She was sent to the hospital on account of the nosophobia from which she suffered, the result of too much sympathy at home. When her parents left her she wept bitterly; but she was soon cured by being made to breathe in quadruplets and by a little jollyng. She promised she would try to behave properly if her parents were allowed to visit her. The promise that they might do so stopped the weeping for twenty-four hours; the visit was postponed, however. She was encouraged to play with another little girl patient; and this she came to enjoy so much that she ceased to ask to go home. When she had become quite contented and happy she was allowed to return home, where she has remained well ever since.

The treatment in the hospital consisted of creating an atmosphere round the little patient designed to show her how trivial were her own preoccupations about what she should eat as compared with the real suffering and disabilities of the patients round her in the ward. Of design she was placed in the open ward in preference to the private room. She was shown to what a degree her feelings and behavior were under her own control, and no solicitude was shown about whether her food would agree with her or not.

It is not possible to set down in detail the numerous measures used to destroy the inconvenient suggestions to which she had been subject so long. While the therapeutics inevitably contained a modicum of suggestion, yet the end worked for was always the giving of a rational understanding to the little patient of why her symptoms had occurred, and how to prevent them in future. In other words, the *modus operandi* was persuasion and re-education. Toward this the hospital furnished a valuable aid, but not merely because it was a hospital, but because the nurses were intelligent coadjutors of the case. The child had been too much derationalized to have been manageable

by office consultations alone, unless the mother had been able to collaborate, which she was unable to do, not from lack of intelligence or conscientious desire for the good of her child, but because she had not understood the psychological mechanism of her daughter's illness. The mother's re-education was much more readily effected when uncomplicated by the child's presence. Its success was shown by her successful management of the child when she returned home, for eighteen months later there had been no further trouble.¹

Why a Child's Mind Needs Work.—Because they fear to overburden the child mind, parents hesitate to institute systematic education of very young children. As a matter of fact, proper mental labor is needed for sound psychic health. Physiologists know that a disused organ is more liable to disintegration, or to become diseased, than one which is regularly used. I need not expand what is an axiom.

But an impression prevails that growing organs should not be subjected to work. This is a gross error, for organs which do not work cannot grow well. Even the bones become tough, hard, and large in proportion to the stresses to which they are subjected by frequent and vigorous pulls where the muscles are attached. The comparison of the average male skeleton with that of the average female strikingly illustrates this fact. But proper development is possible only during the period of growth, the growth in adult structure being relatively slight however great is the exercise of function. What is true of structure is true of functional power. From ballet dancers to violin virtuosi, artists must be trained from early youth. It may be objected that this is so because muscular agility is required, but this objection is only superficial, for the dexterity of an artist is made possible not merely from superior co-ordinations of movement, but by means of the superior speed and accuracy of the guiding mental processes which reside in the brain.

Now, as intellectual dexterity is also a function of orderly

¹ The child here described is plainly one of the atypical group as described in the classification underlying the argument of this book. It was fortunate that the nurses in the hospital where she was placed were intelligent and willing enough to deal with the educational problem intrusted to them. But such a case is certainly a problem of re-education, in co-operation with psychiatric treatment. It is for cases of just this kind that special educational work, as typified by the work done at HERBERT HALL, is particularly needed.—M. P. E. G.

functioning of mental processes seated in the brain, it should be manifest that these, too, should reach excellence best when they are trained by a capable hand during the formative period of early youth.

To Learn to Concentrate Keenly, Games Are the Best.—Therefore, the first fault to avoid in order to prevent neuroticism, is an inattentive slovenliness of thought and act.

The finest of all means for developing the power of attention in children are exercises and games, more especially the latter; because, if properly conducted, they counteract slipshod ways, and make for an efficiency the results of which are evident at once, giving a satisfaction which sustains the attention. But even games can be psychologically harmful if they are allowed to deteriorate into an inattentive go-as-you-please without zest.

Active play stimulates attention in two ways: firstly by the interest and by the pleasure of accomplishment; and secondly by the emulation of others. On account of that very interest, however, games must be used moderately, and as a means to an end, or they will speedily dwarf in the child's mind his interest in more directly useful accomplishments.

The social function of play will be spoken of when the inclinations, altruism, anger, and anxiety are discussed.

Oversustained Attention.—Every athletic trainer knows that staleness supervenes when an athlete is taxed beyond a certain point. To be stale or overdone is the colloquial expression for what physiologists would call fatigue. Now, psychologists have by experiment proved that attention is very quickly tired; and the more intense it is, the sooner it fags, even while interest is maintained. Pedagogy shows the futility of prolonging children's work beyond certain hours even for the sake of the work itself. For the sake of the child's health, physicians have long pointed out the inimicalness of artificially stimulating the interest of a fagging child.

Just as detrimental to concentration of attention as is the lack of training is the exhaustion ensuing upon an effort too sustained for the child's capacity. The maximum concentration is only possible for a very short period, and even then is proportionate to the favorableness of the conditions both bodily and psychologically. For instance, it would be very wrong to compel a child to practise concentration while his energies are engaged in the

digestion of a heavy meal, or immediately after strenuous muscular activity, or when in need of sleep. None of these well-known dangers would be incurred by wise parents of a neurotic child.

But there is another aspect of overprolongation and insistence upon the attention of a nervous child; that is, the cultivation of an overnice or scrupulous manner of performance and of thought. The development of this quality becomes interwoven with the deepest feelings of the personality; in consequence, its avoidance had better be considered after we have discussed the relation of the feelings to neuroticism.

Overintensity.—Eagerness and overintensity not only exhaust, but frequently lead to ineffective effort, a kind of stammer of movement, a lack of directness and precision. Of course this physical expression in movement is only reflection of the action of the brain which is the director of the movements, which are merely the index to wavering thought. The remedy for this condition is to insist upon deliberateness and system both in play and work. The practice of musical exercise is especially beneficial in teaching steadiness at gradually increasing velocity. The practice of recitation from memory, or the systematic relation of incidents which have happened is another useful method in the correction of this defect.

Overeagerness may lead a child to neglect his meals and sleep, so that even when there is no mental stammer, and there is a high degree of dexterity at work and play, yet nervous instability ensues on account of imperfect repair of waste. For example:

A boy of 11 (*Case 84*) was brought by his mother because of grimaces and nervous movements which she knew presaged a breakdown such as he had had twice before on account of which he had to spend two years away from school, rustivating. He was a boy of extraordinary capacity, far exceeding others of his age in all athletic sports, and when at school immediately springing to the top of his class. Conversation showed that he was no mere parrot, but had both common sense and poise. He even recognized his own overintensity, but his ambition made him unwilling to lay much stress upon it from fear of being kept from school and athletics.

His good sense was shown by his retaining a friendly attitude even though forbidden the competitive athletics which he loved.

This, however, was perhaps the easier as the other restrictions were minimal, consisting merely of a modification of the diet to make it accord with the principles already spoken of in the preceding part of this article, and the enforcement of a half-hour period of complete rest after meals. The object of this was two-fold. First, to secure repose for digestion; and secondly, indirectly to prevent hasty eating, as when he could not go out immediately after dinner nothing was to be gained by bolting it. These simple measures produced astonishing results, the grimaces all disappearing, and the boy acquiring much greater stamina.

This boy's father is of the same temperament, a type whose mental processes are very much more rapid than the average individual's, so that in the same space of time two or three times the usual amount of work can be accomplished, at a corresponding expenditure of nerve-force.

These persons are nearly always subject to insomnia. This is not due to worry, not even to a desire to think for the pleasure of it. It is because the energies have been so actively deployed toward the cerebrum that the body processes cannot settle down to the resting pace. The condition is quite similar to that produced in most people by tea or coffee. It has, of course, a purely physical basis, and is very likely due to an overabundance of substances of internal secretion which activate the tissues as we know is done by the products of the thyroid gland, the adrenal, and the pituitary body.

In this variety of exceptional child there is need of very special treatment in the direction of shorter hours of work, and great attention to nourishment and repose. If this is not secured, the vitality needed in the struggle of life will be dispersed prematurely, and the individual will fail to complete his undertakings from lack of stamina.

II. *The Mismanagement of Emotion, Sentiment, Desires and Inclinations.*—(a) *Intemperance.*—An emotion is an involuntary reaction within the body itself without reaction upon the environment. For instance, the word *pathos* expresses the idea of a suffering of the subject without any external action. This apparent difference between emotion and action has an anatomical foundation; for motion is accomplished by contraction and relaxation of muscles in which the protoplasm (6) is arranged in

layers across the grain, and it is subject to direct control by what we express as the will; whereas emotion is accompanied by contractions and relaxations of non-striped muscle which moves only such tissues as the coats of blood-vessels, the walls of stomach, intestines, and other organs, the roots of the hair, the substances contained in the cells of the glands. So much is this so that the feeling derived from these movements is to some psychologists the emotion; and a person without these structures would feel no emotion even at the most distressing circumstances. But while the reaction of emotion cannot be influenced directly by willing it, yet it is for practical purposes under the influence of the central nervous system, that is to say, through the impressions received by the senses, the sensations of which are by association elaborated into perceptions on account of the memory of similar allied, contiguous, or contemporaneous sensations. These are abstracted into what we call *ideas*, and the process of elaboration is called *thought*.

Now, every sensation is either pleasurable, painful, or indifferent; and likewise is each percept, idea, and process of thinking. The chance of any of the latter being entirely indifferent is very small. The feeling toward a thought is a species of emotion known as feeling tone. It is a practical axiom that the feeling tone depends upon the thought of that moment, and is a condensation of the numerous feeling tones concomitant upon the episodes of which that thought is the abstraction. Which element of a thought shall preponderate is a matter of attention; and as each thought has its sombre and bright elements it may be made capable of affecting the feelings either pleasantly or unpleasantly. The popular expression, "looking at the bright side," has a real psychological foundation. By deliberate attention to the ugly or distressing aspect of the recollection of an episode, pessimistic feeling is readily induced along with its various bodily reactions, muscular relaxation, shown by sagging back and shoulders, drooping mouth, slow movements, lack of ambition, the interference with digestion and assimilation, showing themselves as indigestion, constipation, slowing of respiration, and interference with the internal secretions of the body.

On the contrary, if attention is focussed upon the pleasing or beautiful elements in the concept, a feeling of satisfaction is engendered shown by bright eyes, radiant face, brisk step, active

breathing, good digestion, and enterprising mind. The degree to which the way of looking at things can affect one's judgment is illustrated on a large scale by various associations of optimists whether these band together under a religious aspect or not.

Shakespeare has made Hamlet say: "There is nothing good or bad, but thinking makes it so." This is not a mere phrase. The effect of the way of looking at things upon the bodily reactions is most profound as has been proved beyond refute by most carefully controlled experiments.

Pavlov by his experiments on the dog proved that merely showing him the whip would suppress the flow of gastric juice. The dog was a victim of his imagination, and became ill to the extent of an incapacity to secrete gastric juice, which means very ill indeed. In fact, psychogenetic physical illness of this kind may reach such a degree as to cause death, as has been experimentally shown by Crile and others.

The sufferings induced by the "gnawing fox" of the Japanese are made possible only by a deeply rooted belief in its existence. For example, a woman (**Case 85**) after labor declared she felt the "fox coming"; this was her interpretation of the after-pains she felt. The great parade of the neighbors in attempting to prevent the "fox's" attack only reinforced the patient's apprehension, and soon a horrible convulsion signaled her seizure by the fox. Terror and convulsions held her until the exorciser was called. He declared that the fox would leave her at four o'clock the next day provided certain offerings were placed on a certain tomb for it to eat. This simple suggestion caused her to dismiss her terror suddenly at the hour designated. The crudeness of the mechanism (7) in the case of this ignorant Oriental need not make us smile, for some of our Western cases are very little better.

The following case illustrates the mechanics of tics (8) and insomnia by suggestion.

A child had a series of tics consisting of smacking the lips (**Case 86**) and bending down, touching the floor, resulting from her desire to avoid hurting others with her breath which she believed was noxious, and to avoid hurting the floor with her hard heels. Therefore, she applied the "healing kiss" to the air which she expired, and the "healing touch" to the floor. After these had been removed through sanatorium treatment she was

thought to be too nervous for school, especially as she could not sleep for hours after her mother attempted to teach her. In reality this child was not "nervous" at all. She was neither apprehensive, nor fidgety, nor irritable, nor of a difficult temperament. She had stayed awake by suggestion, because her parents had let her see that they were afraid of it. The matter was explained to child and parents, and in consequence of the step thus taken the child has attended school. She remained perfectly well ever since.¹

The seeming excessive reactivity of people who feel emotions deeply is not direct, but merely because the emotion gives a more imperative aspect to the notions in consequence of which they act. If the action is intemperate it is not so much because the emotion is so as because the ideation is not adequate to form proper judgments.

Hysterical Phobia.—For instance: A boy of 8 (**Case 87**) was sent to me because he was subject to "fits," previously diagnosed epileptic, which consisted of sudden attacks of fright, and the imperative desire to rush away. I soon discovered that this was due to his fear of wild animals, induced by the general timorousness inculcated by a foolish mother, who developed in him a timidity which was the source of his impulse to run away. A simple explanatory talk and some psychomotor (9) exercises showed the boy how to obtain control; and after the interview he recovered completely from the consequences of his morbid fears. This case illustrates the fact that even in children a realization of the situation is the important thing. It is only when a patient can intelligently interpret the symptoms of a psychogenetic (10) disorder that he is in a position to cause them to disappear. The patient does not get well from the analysis, but because of the psychic procedure adopted therefrom. The reason this boy ran away was because he thought there was a wild beast; both the emotion of fear and the action of running away were natural enough from the premises. The fearsomeness of his surroundings had been inculcated by the attitude of an unwise mother.

Emotions.—The most incommoding, and often dangerous, of

¹ The case is fully described in my paper "Psychogenetic Disorders of Childhood," in *American Journal of Medical Sciences*, 1912, and in *Journal of Abnormal Psychology*, 1912.

all the emotions is *fear*. In the case of the boy just related, it was the induced fear which caused him to rush away. The whole psychology of fear would take too long to amplify here; but as it is the foundation of most of the disturbances known as psychoneuroses (11) to which the neurotic child is most subject, it is necessary to consider its prevention. Perhaps this is best done by an illustration and the commentary upon that.

The formation of a *night-terror* (12) was nipped in the bud in the case of a boy aged three and three-quarters (Case 88). For several weeks he had been visiting the zoological garden every afternoon in the company of a French maid of exceptionally forceful character, and apparently free from the superstitiousness of the average nurse. For a long time all went well, until one evening he began to cry in bed soon after he was left for the night. At this unusual occurrence I mounted the stairs and inquired the cause of the boy's trouble. He said there were lions in the house, and that he did not want to stay alone as he was afraid they would eat him. The source of the idea had been that the lions had roared more loudly than usual on that particular afternoon, and he had been much impressed, standing for some time quite motionless before the cage, though unterrified. I soon convinced the boy that the lions had to remain in their cages and could not get out, hence there were none in the house, so that there was no occasion for fear. Of course, it was first necessary to give him the feeling of security gained by embracing me, and secondly to begin the conversation by talking of something else. In this way the state of terror was dismissed and the feeling of protection was induced before we returned to the subject of the lions. Then we made rather a joke of the funny roaring of the lions before we had finished, and he finally lay down with the solemn purpose to go to sleep and think, as I had suggested, of the cars and motors passing outside his open window. It was all a very simple substitution (13), but it was the prevention of what might have become a serious fear-psychosis (14) if injudiciously handled.

When the fears are already formed the resources of a good neurologist should be invoked in order to disperse them. I give an illustration.

A girl of 16 (Case 89) was referred by Doctor Litchfield, of Pittsburgh, November, 1913, on account of great nervousness

for years. She had never been regularly to school until the fall, when she had been sent to boarding-school after convalescing from appendectomy, but had become so nervous that she had to return in two days. Inquiry showed that she would frequently wake in the night very much afraid unless she were soothed by some one sleeping with her, so that she could never sleep alone. Further inquiries showed that a servant had told terrifying stories to her sister as a child; the horrors this brought ran through a family of three children, but they passed away from all of them except this patient. She had been much indulged between the ages of 3 and 6, and had been somewhat spoiled since, owing to a supposed weak heart, and had always been considered a weakly child. Her father and an aunt had been timorous as children; the latter, for nine years, had not dared to be alone for a moment.

Her fears are either of fires or burglars, and they only occur when in bed or asleep; she whines when dreaming and wakes frightened. She never screams, but clutches her companion desperately for reassurance. She is sure she wants to get rid of this trouble. She cannot remember the first occasion of fear. Noises, such as creaking floors, make her think there is some one in the house; although she knows positively there is not, she cannot make herself believe it. She is ashamed of the emotion and will go to bed alone, although terrified, if there is some one else up-stairs, but not unless; but will wait until her mother comes. She imagines a burglar might hurt her if pushed to it.

Analysis shows that there is no definite fear of what he might do to her, but that the fear is of the unknown, and although it might help her to know it, it might be too terrible. Her agitation upon speaking of this she attributes to her shame of being "babyish." I explain there is no shame in what one cannot help, but she cannot recover until an understanding is gained through analyzing the situation. She is not less frightened when away from home, but any person in the room will tranquillize her fear upon wakening if she can touch her. The night fear is quite different from any fears in the daytime.

After the analysis she was asked to go home and write out her impressions of the situation, which she did as follows:

The earliest instance I can remember was about eight years ago when my nurse sat in the next room while I went to sleep. For five

or six years afterward some one was with me when I was going to sleep. If I woke up in the middle of the night—which I usually did—I would be terrified and go into mother's bed, with her, in the next room. It is only within the last few months that she has been sleeping in the same room with me the entire night. Before that I always went to bed in the room next hers, but rarely remained there all night. I cannot ever remember having the nurse put me to bed and then leave me to go to sleep by myself. She was always in the next room. It made very little difference whether my mother, nurse, or sister were with me. I preferred mother, but would have any one rather than be alone. I was always worse in our city home than in our country home, because I thought there would more likely be burglars in the city than way off in the country. I would go to sleep more quickly in the country, but would always have some one with me. As long as I can remember I have dreaded the night. I always lie awake a long time after going to bed fighting with my terror of burglars. Every sound made me think of them, and I used to hold my ears shut so that I could not hear the floor creak, and try to go to sleep in that way. So when I thought of those long, sleepless hours I would wish there was no such thing as night.

Her dread is mingled with self-contempt at her "silly babyishness." Three dreams were obtained. The first and second were of a burglar entering a window. The analysis showed only that the intruder aimed to shoot her sister, who was standing up behind her; a dream of fears of elevators led to no pertinent associations (15).

As the dream analysis was so unfruitful I believed it best to proceed at once to reconditioning of the psychological reactions (16). This was attempted in the first place by studying the child's power of understanding of what I gave her to read about the psychology of fear, and by making clear to her what she could not understand alone. In the second place, she was given exercises in mental concentration, and as she became more proficient in these, was urged to apply them to the study of her own feelings of nocturnal apprehensions. The principle she was made to grasp was that fear, and shame of her fears, prevented her from facing and examining them, which was the essential preliminary to the understanding which would make them disappear. In ten days she returned home, not yet able to sleep alone, but beginning to obtain mastery. A month later her mother wrote me that she was entirely well, and when she awak-

ened in the night would quietly turn over and go to sleep without troubling any one. She was physically and in mental health better than at any time in her life.

This child has been at school now two years, and is quite normal.

Concerning Shame and Anxiety.—Shame plays a large part in this case; but *shame* is merely social or moral dread, and, physiologically speaking, must be treated just as is fear.

When the moral factor is very strongly present, and the physical agitation is decided, the condition is termed *anxiety*. A great deal has been recently written about the victims of chronic anxiety; but most of the writers are too narrow in their conception in relation to the fear or shame which is its basis, and have often strained their explanations to fit a preconceived theory. In this respect the work of Doctor Boris Sidis, in this country, and of Doctor Pierre Janet and of Professor Déjérine, in France, are notable exceptions. Upon the foundation of anxiety are frequently developed scruples and little manias (17) or even tricks of manner, expression, and gesture. The grimaces which children make sometimes have this foundation.

They are immediately due to a sensation of discomfort. When this is more purely intellectual it gives rise to a feeling of incompleteness or inadequacy to a situation. When focussed upon some particular idea the feeling of inadequacy may give rise to an *obsession* (18) concerning the difficulty presented. This besetment is always accompanied by a certain morbid dread known as *phobia* (19). These various symptoms have the same psychological foundation, and very frequently alternate in the same patient. These manifestations are termed by Janet *psychasthenia*. Again the best understanding of the situation is furnished by an example, although the well-developed disease is unusual in children, as the manifold symptoms require an intellectual bent which few children possess.

Multiple Manias.—A boy of 14 (Case 90). He was not doing well at school; he would take hours to dress in the morning, and would go away and dream by the hour. Analysis of the situation showed that his condition was the result of reactions caused when the child was only three and one-half years of age. He had been the only child, much petted and loved. When he was two and a half years old a little brother was born, and he

was jealous of the newcomer, who immediately became the petted and loved one of the family. He was reproached by his parents. In consequence, he was made to feel hyperconscientious because of his bad behavior, and forthwith developed little "manias" as expiations which led eventually to the more complex symptoms which had developed when I saw him. Instances of these are not uncommon even among persons judged normal; thus, many persons feel that the mere touching of wood or avoidance of the number thirteen wards off misfortune. People tend to do these things to be rid of an uneasy feeling. Whether or not these are interpreted in some definite way or not depends on the environment. This boy, for instance, felt he was unreasonably jealous of the little brother, and that he must do something to compensate for it—to touch wood or to put on his clothes slowly or in a particular way; and he had, as a result, built up this elaborate series of habits. He was cured in a few months.

Malady of Scrupulosity.—The son of a United States senator (Case 91) was 30 years of age when seen. His condition had been very serious for a long time. He was cured in less than two years by a gradual education which freed him from extreme dependence upon oversolicitous parents. The young man would take two or three hours to dress in the morning, even when helped. He had lost all initiative, and before performing any act felt compelled to go through numerous trivial expiations. Manifestations of this kind are not uncommon. The persons subject to them are sometimes mistakenly called neurasthenics (20). But the condition is usually psychogenetic, and always arises from habits of thought and emotion which have been allowed to arise during childhood because the parents have not known of the danger of oversolicitous, excessive sympathy or its contrary: neglecting the child's affections until he falls back upon self-pity. Rigid insistence upon discipline and routine is a fertile source of psychasthenia. In the United States it has not often been severe, but in Germany many hundreds of children have been so psychasthenic that they have committed suicide because unable to endure the stress of existence. Overinsistence upon religious tenets, more especially when these have a basis of asceticism, has produced a great deal of this malady of scruples, as Janet has called it. This again is less abundant in the United States than in countries where the church has

greater authority. Especially prone to these dangers are children who from any cause are kept from close companionship with other children, *e. g.*, an only child, a child in a family which thinks itself better than its neighbors, a delicate or much-refined or unusual type of child who is too sensitive to the gibes and cruelties of youngsters, tends to lack the intimate companionship which would neutralize the morbid influences at home. Lastly, physical disorders themselves may give rise to timorousness and scruples which make of life a psychasthenic thing.

Psychic Hardening.—Just as the bones and muscles become strong by arduous exercise in childhood and early youth, so does the psyche become resistant to the “slings and arrows of outrageous fortune” by practice against them during childhood, the formative period. It is a crime against a child not to give him practice in self-mastery against rebuffs, snubs, slights, and discouragement; for if he encounters them for the first time when mature, the struggle against his feeling of injury will require enormous energy, and seriously interfere with both happiness and efficiency; whereas the child soon rebounds against the insults without undue melancholy provided the education is begun very young.

Shame of Sex.—A matter which causes distress of mind to some young people, more especially girls, is shame of the bodily functions. The painfulness with which what they have come to regard as a sacred mystery meets the shocks of what to them is a callous, ribald world, would have been avoided had their education been conducted with respect to their own physiology at the proper time, that is to say, when they made inquiries concerning what they observed. Instead of that, the barbarous idea of the shamefulness of a normal function is inculcated, implicitly at least, and the consequence is a large number of what have been called sexual neurasthenics, who are often too ashamed even to consult a doctor. Hence they ask advice of advertising charlatans, who only add to their horror and then exploit them for gain.

Shyness.—Social timorousness, which is only a kind of shame, finds a powerful antidote in games; for these encourage the free play of the inclinations and initiative in dealing with persons on an equal footing, so that the timid child is often surprised into dealing with the situation just as any one else does. Therefore

he gains confidence in his capacity, and encouragement to try something else which his diffidence has prevented hitherto.

For the timorous child, social intercourse should be shorn as much as possible of conventional restrictions. Americans, especially in the West, can scarcely realize to what a degree conventionality and artificial class distinction has interfered with social life and the integration of corporate activity in monarchical countries.

To protect a thoughtful child from being victimized by social shame which he would allow to eat his heart out rather than divulge, a good method is to explain to him the idea of social solidarity, and his own place in the human cosmos: so that, when treated rudely or superciliously, he will understand that he need feel no embarrassment—for it indicates merely a lack of good breeding on the part of the person who so treats him.

DEFINITIONS

1. *Germ-Plasm.* The portion of the ovary which does not take part in the development of the body of the embryo but gives rise to the reproductive elements in the adult.

2. *Psychopathology.* A word used to denote abnormal behavior not due to physical defect, but the result of impressions upon the mind. Peculiarities of temper, bad habits, perverted inclinations, morbid fears, annoying thoughts, irregularities and incapacities in movement may each be the result of causes purely psychological. The science of their causation is called psychopathology. The science of their treatment is called psychotherapy.

3. *Protein.* The nitrogen-containing substances of living bodies as detected by chemical analysis. They are of different kinds and are essential for growth and the maintenance of body weight. Their chief dietetic representatives are eggs, lean meat, milk, and cheese.

4. *Purin.* The substances which give rise to uric acid.

5. That is from unmilled grain.

6. *Protoplasm.* The portion of the body which is alive as distinguished from bone, skin, and other substances manufactured by it.

7. *Mechanism.* A simile borrowed from mechanics to denote the constituent mental processes of the complete account of any psychological situation.

8. *Tic.* An abnormal movement not produced by mechanical or chemical agents, but due to an act of the will. It has the character of compulsion and inopportuneness to the surroundings. It is usually

derived from some purposive movement the occasion for which has ceased. It acts as a relief to feeling of discomfort or tension. When the tic is frustrated by the will, much distress is caused at first. To cure a tic, either the discomfort upon which it depends must be discovered and removed, or else the patient must be taught to master the impulse to perform the abnormal movements. This is accomplished by disciplinary exercises in controlling those muscles which tic. This is facilitated by all kinds of training in self-control.

9. *Psychomotor*. Movements inaugurated by psychological means as against automatic movements, and especially designed to develop the function of control.

10. *Psychogenetic*. That which is produced by the psyche, that is to say, the emotions, intellect, and will as against the soma, or body, which comprises purely mechanical and chemical agents.

11. *Psychoneuroses*. Mental disturbances not caused by bodily disease, and which do not lead to dementia or other mental alienation.

12. *Pavor Nocturnus*. This was once supposed to be a disease in itself, and a great deal of superstition gathered round its very alarming manifestations.

13. *Substitution*. The process of changing one idea for another which dominates the mind.

14. *Psychosis*. A term used in two senses. In psychology it is equivalent to a psychological state or episode. In medical psychological work it has been used to denote a condition involving insanity.

15. *Associations*. Process by which episodes occurring together or in sequence are linked in memory. The notion of causality is a matter of association. Analysis of unusual juxtaposition of ideas sometimes reveals circumstances which have led to psychoneuroses.

16. *Conditioning*. A term given to a changing of reaction to circumstance through modifying the ideas regarding it. It is a change of mental attitude. Its potentialities are enormous.

17. *Mania* has two senses. The best known one is that of violent insanity; the other meaning, used here, is of a little twist of thought, a slight obsession. The term monomaniac refers to this sense of the word.

18. *Obsession*. A morbid idea not so fixed but that the victim questions it, and quite realizes its morbidity. The struggle for verification gives rise to discontent and distress. The doubting mania is a form of it.

19. *Phobia*. An obsessive fear not warranted by external circumstances. Very common is the fear of high or wide places, the fear of microbes, pollution, assault, animals, the dark, of rain, in fact of any situation of human experience; or even a fear of the unknown. They are entirely curable by modern psychotherapy.

20. *Neurasthenic*. A term which should be properly restricted to

conditions of simple exhaustion or failing stamina of which the mechanism is physical. In this sense, it is by no means so common a condition as was supposed at the beginning of the century.

Note.—The practical suggestions made by Doctor Williams, in this illuminating paper, for treatment and re-education are particularly welcome in this volume as they tally so well with the methods used in the author's own practical work, as exemplified at "Herbart Hall."—M. P. E. G.

XX. EPILEPSY

By DOCTOR D. C. MAIN, and MISS SARAH BARD, Welaka, Fla.

Extent of the Epilepsies.—The epilepsies, in one or more of their various manifestations, claim as victims approximately one in three hundred of our population.

This dreaded disease has been known for centuries, but it is only within recent years that any material progress has been made in its scientific study and treatment. Modern research has opened up a new vista of hope for many of the afflicted ones, where formerly none was given.

If we consider only the extreme forms of chronic cases, we may regard them all as hopeless and unfit to remain in the family or under normal social conditions.

Causes of Epilepsy.—There is no specific cause for the various manifestations of this condition; on the contrary, its causes are numerous and varied.

Epilepsy is less distinctly congenital and less due to perverted development without disease than some other conditions discussed in this book.

Epilepsy, alcoholism, and insanity in the parents; brain injuries; the infectious diseases of childhood; food poisoning; and the specific body diseases are among the many causes of epilepsy. Too much stress cannot be laid on the part adenoids play in the production of epileptic seizures.

Heredity is the greatest single factor in epilepsy, sixteen out of every one hundred cases being directly attributable to the same disease in the parents.

Treatment of Epilepsy.—The general treatment of epilepsy is only possible in its entirety in special institutions conducted on the colony or small village plan, where the outdoor life with a

regular occupation, such as gardening, poultry-raising, etc., can be followed. The epileptic patient should have the opportunity to choose the line of work on the farm most congenial to him, thus employing his mind and preparing him to be self-supporting in the future.

The exercise thus obtained is conducive to long hours of sleep and good digestion, so essential in these cases.

One of the most common mistakes parents of defectives make is to allow the child to run wild, abandoning all discipline, in the hope that the attack will come less often. They should remember that the victim of epilepsy needs more than most people the self-control and good habits which only wise discipline in early life can establish.

Dietetic Treatment.—Too much stress cannot be laid on the dietetic treatment. That evolved at Craig Colony is probably the best. The schedule is here inserted:

	<i>Breakfast</i>	<i>Dinner</i>	<i>Supper</i>
<i>Sunday</i>	Oatmeal Bread Butter Coffee	Soup Vegetables Roast beef Bread, butter Gelatine pudding	Bread Butter Tea Cookies Milk toast
<i>Monday</i>	Creamed codfish on toast Bread, butter Coffee	Soup Boiled rice Potatoes Mutton Rice pudding	Stewed prunes Bread, butter Tea
<i>Tuesday</i>	Oatmeal Bread, butter Coffee	Meat stew Potatoes Vegetables Bread, butter Fruit	Buttered toast Baked apples or apple sauce
<i>Wednesday</i>	Oatmeal Baked potatoes Rolls, butter Coffee	Soup Roast beef Mashed potatoes Vegetables Tapioca pudding	Hot corn bread Crackers Cheese Butter Tea

	<i>Breakfast</i>	<i>Dinner</i>	<i>Supper</i>
<i>Thursday</i>	Oatmeal Bread, butter Coffee	Soup Beefsteak Boiled potatoes Vegetables	Apple sauce or baked apples Bread, butter Gingerbread Tea
<i>Friday</i>	Oatmeal Bread, butter Coffee	Soup Fresh fish (baked) Boiled potatoes Stewed tomatoes Bread pudding	Canned fruit Bread, butter Cheese Tea
<i>Saturday</i>	Oatmeal Rolls, butter Coffee	Soup Roast beef Boiled potatoes Macaroni Corn-starch pud- ding	Hot corn bread Butter Fruit Tea

This dietary excludes an overabundance of nitrogenous foods, sweets, fats, and hot breads. The meat preferred is beef, and the only other meats ever given are mutton, fish, and chicken.

Potatoes, beans, peas, onions, turnips, oyster-plant, beets, parsnip, celery, corn, tomatoes, carrots, and spinach are the vegetables used.

Medical Treatment.—Space forbids many words on the medical treatment, but if the cause be found the treatment will suggest itself. If adenoids are the existing cause, operate; if food-poisoning, correct the diet, etc.

Any of the preparations containing the bromides are harmful, only giving temporary relief, and often doing the brain more permanent injury than the disease itself.

Every departure from a normal anatomical or physiological condition should be corrected, so far as possible, in the hope—which is often realized—that it is in some way a factor in the production of the seizures.

Potential Epilepsy.—The subject of potential epilepsy can only be lightly touched upon.

The potentially epileptic child has the epileptic or convulsive tendency, and is only waiting for conditions to arise which will favor the appearance of the disease. If these favorable condi-

tions do not arise, the epilepsy never appears. Many a potential epileptic has been saved from his epilepsy, beyond doubt, by the early correction of diet and habits, and the early removal of adenoids and other surgical conditions.

The child who is subject to night terrors, or who has had convulsions as a result of dietetic errors or during dentition, who has had any of the specific diseases of childhood, who has had rickets, severe head injuries or cerebral palsy, or who has a bad parentage may be a potential epileptic, and should be watched and have early training begun, even though an epilepsy may never appear.

Mental Condition of Epileptics.—Mentally all epileptic children are exceptional, some being unusually bright, others unusually dull.

Among the bright and clever ones it is not uncommon to find that they are allowed to outstrip their playmates, by way of proving that there is nothing the matter with them; but to the trained observer there is something pathetic in the ill-balanced morbidness of their cleverness.

Some of the slow-minded ones are found to be extremely conscientious, and it is well to watch and encourage these.

Since the types vary so greatly, the proper *disciplinary treatment* must vary also, each child being dealt with according to his individual peculiarities.

Possible Improvement.—It has come to be regarded that, no matter what the cause of the epilepsy, if the mental condition remain unimpaired, improvement and often a cure is possible.

Patients having Grand Mal attacks are also more amenable to treatment than those having other types, or those in which the types are mixed.

About 85 per cent of all epilepsies begin before the twentieth year, the essential epileptic periods being the years between the fifth and the eighth, and the twelfth and the seventeenth year.

An epilepsy arising in the first period is the hardest to cure, recent cases being twice as likely to respond to treatment as chronic ones.

About 10 per cent of all epileptics become insane. Repeated attacks tend to weaken the mind and to enfeeble the body. Some forms destroy the mind in two or three years, while others persist through life with little or no effect on the mind.

Epileptics are especially prone to tuberculosis, organic heart-diseases, and many sustain fatal injuries during attacks.

XXI. SEXUAL HYGIENE

By DOCTOR ARTHUR W. WEYSSE, Boston, Mass.

The Rôle of the Sexual Instinct.—What can be done for the exceptional child in the matter of sexual hygiene? The rôle played by the sexual instinct in the normal adolescent is a very varying one. In a few individuals the onset and development of the sexual passion are gradual and uneventful, and, while giving rise to new sensations and emotions, they cause no disturbance of the metabolic equilibrium. Such cases are rare, but they do occur. At the other extreme we find individuals who must be regarded as normal in whom the sexual passion occupies a major place in the personal economy. It obtrudes itself upon their thoughts, it affects all their bodily activities as well. Between these two extremes we find all possible gradations. The majority of adolescents, then, are in a state of more or less unstable equilibrium in the metabolic processes—a lack of stability that is not due alone to the rapid growth of the child, for it is not present (to the same degree at least) in the normal child before puberty. The exceptional child is in a more unstable equilibrium physiologically than the normal child; hence the need for special attention to sexual hygiene in his case.

Masturbation.—Any one who has made an intensive study of sexual matters knows that the practice of masturbation is extremely common in children of both sexes during the adolescent period, so that some writers have been led to consider that it is normal in civilized society, that it is no more harmful than the same amount of normal sexual intercourse would be; and the percentage of children addicted to the practice has been placed in the nineties. However that may be, the fact remains that most children indulge more frequently than they would indulge in normal intercourse, as we know from studies of uncivilized tribes where no restraint is placed on intercourse. Further, the energy thus expended would much better be used for the other activities of the body, and the weakening of the will-power through the repetition of the act is a matter of no small moment. If these

facts are true for the normal child, they are even more significant for the exceptional child. I believe that in the majority of cases masturbation is not a result of viciousness, but rather of excessive stimulation of the reproductive system through a variety of causes for which the child is not personally responsible.

Causes of Masturbation.—The diet of the child is often at fault. Children at puberty do not require the stimulus of caffeine, nor is it desirable, yet many of them get it. Excessive quantities of spices, pickles, and sweets result in abnormal metabolism, and a consequent derangement of more than one function of the body. If the sexual system becomes hypersensitive under these conditions, it is the fault of those who have charge of the child. The genital organs themselves should receive expert attention. In some cases the cause lies in an adherent or in a redundant prepuce, in others in phimosis, in others in an excessive secretion of smegma which the boy does not know that he should remove. There is a great variation in the amount of this secretion in boys; in some it is so great that it should be removed by washing at least once every twenty-four hours. Most boys receive no instruction whatever in this matter. Some boys have an unsuspected congenital stricture of the urethra that may lead to enuresis and involuntary manipulation of the genitals. Some have a stone in the bladder; I remember seeing a vesical calculus removed from a boy of 10 in a London hospital a few years ago.

In girls there are very frequently unsuspected adhesions about the clitoris that lead to masturbation. Such cases have been reported in medical literature within the past years; they are readily relieved by circumcision.¹ Vulvovaginitis may cause masturbation in little girls; it is a much commoner disorder than many suspect, and its etiology is often obscure. Sometimes it is due to the gonococcus, but very frequently to other organisms. Careful medical examinations of the genito-urinary apparatus should be the rule in the case of exceptional children, and for

¹ Not always, that is to say, only when there are no other complications of a physiological or psychological character. The author has had a little girl of 10 (**Case 92**) under observation who was badly affected. Adhesions to the clitoris were removed, and vulvovaginal treatment established. There seemed to be no other physical or local cause, but the masturbation was not checked by these measures.—M. P. E. G.

that matter is highly desirable in the case of normal children as well.

Sexual Education.—Concerning the normal physiology of the genital organs at puberty—the appearance of the menses in girls, and of nocturnal emissions in boys—I believe that each child should so far as possible receive individual instruction. This information may be imparted by the parent if he or she has the proper personality. If not, it would much better come from a physician. In my opinion, class instruction is much less desirable.

Sexual Abnormality as a Cause of Exceptional Development.—Some children are undoubtedly exceptional through abnormal development of the sexual organs, which causes either retardation or precocity. Exact knowledge of the cause of these conditions is still lacking, but recent experiments on animals and the clinical reports of several years show us that the endocrinal or ductless glands have a very pronounced influence on sexual development. The two glands that seem to be most important in this respect are the pituitary and the pineal, but we know now that the endocrinal glands do not act entirely independently. A recent case reported in medical literature (**Case 93**) is illustrative of this: Shortly before his death, a boy of 5 years and 10 months was 42 inches tall, 24 inches around his chest, and had genitals the size of those of a man. His death and his excessive bodily and sexual development were due to a large tumor of the cortex of an adrenal gland, while the pineal and the pituitary glands were normal. Lack of secretion of the pituitary body results among other things in retarded sexual development—the persistence of infantilism so far as the sexual organs and instinct are concerned. It has been thought that the pineal gland, which attains its maximum development between 7 and 13 years of age, and then degenerates, might exercise a retarding influence on the development of the sexual organs, and that precocity might result from a lack of pineal secretion. Recent experiments on young animals, however, show that when fed with this gland they developed both somatically and sexually more rapidly than normal animals of the same species. Extract of the pituitary body has been given in cases of infantilism with good effect, and we shall doubtless soon be able to treat both precocious and retarded sexual development more effectively.

XXII. SOME SEXUAL ABNORMALITIES

By DOCTOR W. F. BLAKE-BURKE, Plainfield, N. J.

Atypical Children and Sexual Problems.—In studying the group of exceptional children which Doctor Groszmann has designated as atypical, we are confronted with many cases in which the sexual life is perverted or at least gravely endangered. This is more particularly true of Class (a) of this group, "Neurotic and Neurasthenic Children." As a matter of fact, a certain school of psychiatrists maintains that neurotic and psychopathic tension is invariably and intimately associated with, or even caused by, difficulties and abnormalities in the early sex life of children of both sexes.

The second class of atypical children, "Children of Pathologically Retarded Development," furnishes its quota of sexual perversions and inversions (homosexual manifestations). For it is this retardation in the development of physiologic function, with its bodily counterpart of infantile anatomical conditions in the reproductive organs, which is more or less directly responsible for sexual abnormalities. It would be perfectly correct to say that much of neuropathic and psychic tension is produced through this pathologic retardation of the physiologic growth rate in the sexual sphere when it stands in contrast with overstimulation and rapid growth in other directions.

Infantile Conditions.—The fact obtrudes itself upon our consciousness that the characteristic manifestations of the infantile sexual life persist in the adolescent of these types as inversions and perversions.

These infantile manifestations become exaggerated in the preadolescent or latent period, and labor against the influence of education, thus producing in the adolescent a generally backward mental condition. The sexual life in these children seems to eat up all their energy, to pervert all the strength they need for making normal intellectual progress.

In other cases we find in the adolescent a seemingly normal intellectual development which, however, when put to the test of the ordinary struggle for existence, fails owing to weakened stamina and exhaustion of reserve force.

Timely Training.—My own practical observations strongly uphold Doctor Groszmann's contention that it is in the second or latent (prepubertal) period that special educational training will have the best chance of success. It is, therefore, absolutely necessary to watch out for evidences of abnormal sexual manifestations in this period—although it should be admitted that the "normal" for this period has still to be definitely determined. Nevertheless, any pronounced interest in sexual matters and symptoms of self-abuse or sexual aberration will have to be considered as danger-signals. There is little hope for cases of this kind without timely special educational training. For it is the instinct of sex with which every child is born which furnishes energies of tremendous power which are needed in the normal life evolution of the child, but which are deviated or sublimated in the latent period. Educational methods following the cultural development of the race will use them as barriers against which the storm and stress of adolescent days will battle in vain. Out of the period of mere sex-instinct, represented in the development of the race by the period of sex-worship and sex-fetichism, which reverberates in many of the early sex mannerisms of children, must rise the consciousness of higher entities in human reproduction.

The infantile form of the sex-instinct is intimately associated with other bodily functions, especially those of secretions which are located in or near the sex-organs. Allow them to continue unchanged through the latent period, and they will recrudescence as inversions and perversions in the adolescent. Ignorance of the infantile sexual life; misappreciation of the grave significance of abnormal sexual manifestations in the latent period, be it from prudery or ignorance; repression of sexual consciousness on the part of the child himself, from terror, shame, or ignorance, are at the root of abnormal developments in the later sex life.

The result is that mental development is retarded; even the ordinary somatic changes of adolescence are often absent. The natural purpose of sex development is obscured, the individual lingers in the preparatory stage and is led into harmful practices; and in the cases of more profound infantilism in this province we find even anatomical vestiges of hermaphroditism pointing back to the beginning of the formation of the sexual organs during intrauterine life.

Constipation.—Constipation in children of the type to which I have alluded is very often obstinate and of special significance. In many cases it yields to proper methods of treatment: diet, exercise, mental discipline, and suggestion, etc. Several cases have come to the writer's attention in which these methods seemed unavailing for quite some time. Two cases are of especial interest; in both, there seemed to be intentional retention of fecal matter for purposes of sexual stimulation. Both had suffered from constipation from early childhood, so that it must be assumed to have been a causal element in the production of abnormal sexual feelings. After this had been recognized by the boys in question, it was purposely used for the gratification of these feelings which had been found pleasurable.

Other Irritations.—There are, of course, other irritations leading to similar results. Abnormalities in the urinary tract and hyperacidity of the urine may irritate the sexual parts and cause sexual reflexes and masturbation. In boys, an ill-fitting saddle of a bicycle or horse may produce an irritation. In girls, riding a bicycle, or riding a horse astride, or even working a sewing-machine, has led to violent masturbation. The sedentary habits of the ordinary school child, especially during the preadolescent period, have played sad havoc with the awakening instincts. The child who wriggles in his seat, or seems to lose himself in self-absorption, with a fixed stare, needs a teacher's immediate attention.

It is thus seen that too much attention to the fundamental bodily functions of preadolescents, even of young children, cannot be paid by parents and family physicians; and that in the treatment of sexual aberrations, observation must be directed to these contributing factors. What has not been accomplished during the latent period in a child's development will present particular difficulties of management. We are dealing not only with psychopathic or neuropathic symptoms pure and simple, but with a perpetuation and recrudescence of infantile symptoms of sex-consciousness. While it is true that there is a distinct medical aspect to these cases, the matter of re-education is paramount, and this educational process will be most successful when begun before or during the latent period. An early diagnosis is essential.

XXIII. TREATMENT OF JUVENILE DELINQUENTS

By JOHN ADAMS COLLIVER, A.B., M.D., Los Angeles, Cal.

A Medico-Socio-Psychological Problem.—The treatment of juvenile delinquents is not purely a medical subject, of course; but a medico-socio-psychological problem. The real delinquent, the repeater, has formed a bad and antisocial habit, and his case is, therefore, chronic. In order to bring about corrective results it is necessary to consider the subject from an etiological, pathological (perversion), curative, and prophylactic point of view.

Etiology.—The analysis of a few thousand cases examined by me shows that nearly 95 per cent are from broken homes; that is, where one or both parents are dead, or morally or mentally unable to discipline their children or themselves. Thus, the child has little or no home training of any value. This condition is always associated with bad environment, idleness, rarely with overwork, and is productive of vice and perverted habits which affect the child by the force of bad examples. On the other hand, the 5 per cent from good homes have been overindulged. It is useless to try remedies if the above-mentioned contributory factors are overlooked.

Pathology. Perversion.—Under this heading we consider two kinds of cases: those which cannot be helped, and those which can. In the first class we find about 18 per cent who are mentally defective. These, of course, should be graded and schooled accordingly. Another species of this same class is afflicted with so-called manias. I have seen numerous cases where the child was apparently normal, but possessing a peculiar mania for stealing certain things, as money, tools, jewelry, women's clothing,¹ bicycles, and the like. These were stolen solely for the irresistible pleasure of doing it.

I do not believe there is a characteristic criminal type among children; nor that a blow on the head will produce criminality, notwithstanding the fact that many parents believed that the badness in their children dated from such a blow. Scarcely a week passed for several years in which some did not appear in court with such pleadings. I have never seen a case of delin-

¹ Here we may be dealing with a perverted sexual instinct.—M. P. E. G.

quency due to such head or brain injury. Such bumps or injuries do not tend toward criminality any more than any other local irritation. It must be borne in mind that parents are usually prone to excuse their child, and the blow is simply a coincident in the boy's life. It has been found that a percentage of these boys were mentally defective.

Under this same heading let us consider *drug and cigarette habits* and *sexual perversions*. It is impossible to effect a cure while these habits continue. They are all accompanied by lying. I have seen a number of cases where boys had committed crimes, and the only accountable reason was one or all of these habits. On the other hand I have seen a change in the moral character with the cessation of the vicious habit. We have used the silver-nitrate cure for cigarettes, with some good effects.

Irritability as an Initial Symptom.—Irritability is an initial symptom of juvenile delinquency.¹ There is a physical basis for this in a large percentage of the boys I have examined. Our records show that over 90 per cent begin their career by irritability at home. This percentage would probably be higher if better statistics were available. It has been our endeavor to discover, if possible, the basis for the irritability, and remove the same. The years before puberty represent the period when most good can be expected from this treatment. The nervous system is then still undeveloped and unstable, and inhibition incompletely developed. The irritations from local causes have apparently a marked deleterious effect upon the faculty of inhibition and upon the exercise of the will-power. Their removal is followed by moral improvement in about 16 per cent of the cases.²

Local Causes of Irritation.—Such defects as decayed, aching, or impacted teeth; enlarged or diseased tonsils and adenoids;

¹ "The Physical Basis for Irritability in Boys—the Beginning of Juvenile Delinquency." Address (by Doctor J. A. C.), illustrated with stereopticon, before the Riverside County Medical Society, City School Board, Teachers and Probation Officers, Riverside, Cal., April, 1911. This paper has been published in the Manual of the Juvenile Court of Los Angeles, 1912. Also reprinted by the New York Probation Commission, March, 1913, and by the National Probation Commission, September, 1913. Reprinted in the *Journal of Sociologic Medicine*, December, 1915.

² Cf. my paper: "Does the Correction of Physical Defects of Juvenile Criminals Improve Their Moral Conduct?" Read before the Southern California Medical Society, December, 1909; reprinted from the *Southern California Practitioner*, January, 1910.

defective hearing and sight; disturbances of the intestinal tract, whether due to worms, undigested material, or indigestion; and, most important of all, irritations and defects of the genito-urinary system. These, together with poor nutrition, toxic, infectious, and other obscure local or constitutional causes, tend to block, or interfere with, the normal impulses or orders from the brain.

Some of these points were emphasized and illustrated in another paper of mine.¹ There it was shown that there were 10 to 15 per cent more cases of defective teeth among juvenile delinquents than among normal children of the same age. We found that correction of decayed or aching and impacted teeth produced a change in the disposition of the child. I believe also that imperfect teeth, or lack of teeth, contribute indirectly to delinquency. For lack of proper mastication is followed by intestinal indigestion, toxæmia, and poor nutrition. Correction of these defects eliminates this vicious train and tends to improve metabolism. I have seen numerous boys change in disposition entirely when their metabolism was improved. It is interesting to note in this connection that my data showed that the nourishment was below normal in 52 per cent of the boys with one or more bad teeth, whereas only 10 per cent were poorly nourished in those with good teeth. It is also instructive to note that of the 10 per cent poorly nourished with good teeth over 65 per cent were cigarette-smokers, and had nervous disorders. Nutrition must be built up to improve inhibition or will-power.

There is no doubt that the removal of diseased tonsils and adenoids is followed by a physical and mental improvement. We find also that a moral improvement appears in about the same proportion as the mental. This may be due to three things:

First: As in the correction of any other defect, the removal of this local irritation eliminates the source of numerous impulses to the brain which have been continually interfering with the normal stimuli.

Second: Practically all these cases improved physically, and proportionately improved in inhibition and will-power.

¹ "Does the Abnormal Condition of the Teeth Contribute to Juvenile Delinquency?" Given before the Los Angeles County Dental Society. Published in *Pacific Dental Gazette*, 1910.

Third: Many a child has the reputation of being incorrigible simply because of defective hearing. This incorrigibility is preceded by irritability, and followed by bad associations, vicious habits, and a criminal life. By removal of tonsils and adenoids the hearing is often restored, and the child is saved from the degraded future.

Eye defects have similar results, and properly fitted glasses have changed the moral character of many boys appearing in court.

In all cases of incorrigibility and delinquency it may be necessary to make *repeated thorough examinations* before a contributing, local cause can be determined upon. Some of the most obscure cases, I believe, are toxic or infectious in origin, intestinal, or so-called rheumatic, or possibly specific. I have seen numerous cases in which the child cleared up in disposition after irritating masses like worms, undigested material, etc., were removed from the intestinal tract; in a few cases, where the rheumatic or syphilitic remedies were administered.

Other Curative Measures.—Sometimes it is well to break in some manner the continuity and periodicity of the criminal offenses, and were it merely by temporary change of environment and occupation, or by some other temporary method. Even the stay in a hospital, or the treatment of some ailment may serve the purpose of interrupting the criminal trend or habit. Time is thereby given for readjustment.

An illustrating series of observations was made on thirty-two cases of so-called hopelessly "bad" boys, who were submitted to a needed operation. In each case it was a circumcision. The beneficial effect was due both, I think, to the operation itself which removed a local irritation, and to the break in the routine of their lives. Each of the boys had appeared in court on an average of six times, once every three months. After the operation, the interval was increased to once in eighteen months, although they were living in practically the same environment. Many of the boys who were bullies and leaders of gangs tamed down and reformed; others, who had been "incorrigible" and persistent truants changed in character entirely. A composite curve of the thirty-two boys is shown in the accompanying diagram.

In this group we have what would ordinarily be called bad

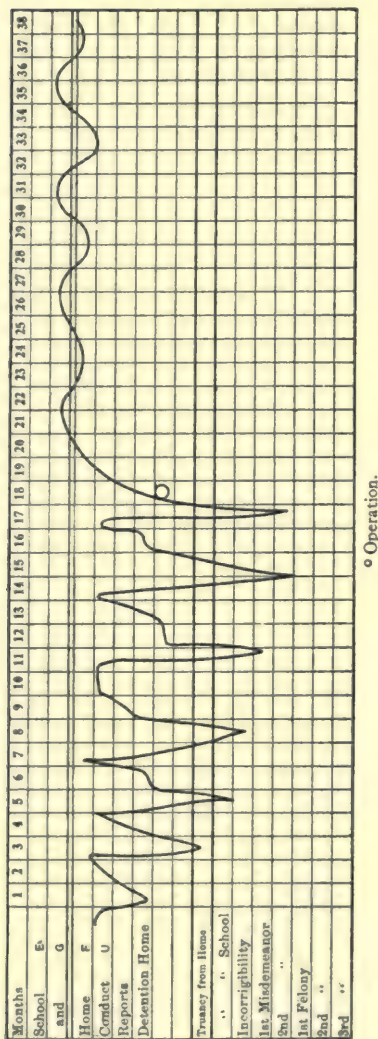


FIG. 63.—JUDGE WILBUR'S GRAPHIC CARDS.

This chart represents periodicity of crime in thirty-two boys, each appearing in court for some offense on an average of six times each—at intervals of three months. After operation not appearing again for over eighteen months, with more or less good report.

boys, who have been tried in every way and were turned over as hopeless. Some had appeared in court for as many as ten offenses. Since operation, some of the boys in this group have not committed an offense or appeared in court in five years. A record of their conduct at home and at school, which appears in the weekly, biweekly, or monthly reports in the probation office, showed a marked improvement in their morals.

Psychological.—Habits, good or bad, when long continued, become part of the body, and are normal physiological reflexes. The physiology of the boy remains the same—passive, ready to be acted upon—while his social environment is continually changing. What you could do with impunity when you were a boy is now a trespass or a misdemeanor. Thus, new habits must be formed in adaptation to the ever-changing social environment, and to the demands confronting the individual in his ascent during the periods of growth. As a curative measure, new habits must be developed so as to supplant the old, or natural, or bad ones. Most important is the demand to give the boy proper *psychological employment*, that is, employment which has his best endeavor and attention. The value of this demand cannot be overestimated. Practically all juvenile courts are now beginning to recognize the importance of this step. If such employment is impossible, then find employment which is furthest from his greatest temptation. The boy should be forced to work at some highly co-ordinated and complicated employment which will completely occupy his mind, and he should do this daily to the point of fatigue. This would establish new habits. Hypnotism and suggestion have been used to some extent, but never with any degree of success.

The conclusions in the above statement are based upon ten years of experience in the Juvenile Court of Los Angeles County, California, presided over by Judge Curtis D. Wilbur.

XXIV. INHERENT IMMORALITY

By DOCTOR ROSS MOORE, Los Angeles, Cal.

Heredity vs. Free Will.—Belief in free will is the central fact in the system of justice and law of the past and, to a great extent, of the present. So-called "justice" has remembered the biblical

suggestion that "whatever a man soweth that shall he also reap," and has wilfully or thoughtlessly forgotten that other statement that "the sins of the fathers shall be visited upon the children." Hence the tendency of all of us has been to hustle the one who transgresses our rights or comfort. This has made us complacent in the past to allow the courts to handle all persons convicted of breaches of the peace as if they were entirely responsible. Anomalies of character often escape the notice of even the most expert character readers until some overt act calls attention to them. The line of distinction between the person who is morally responsible for his acts and him who is not is often a very difficult one to draw. Society, not liking to be troubled with unpleasant things, says in effect: "Take them all away. Maybe some of them should not be punished, but we cannot take time to decide which is which."

Types of Character.—This contribution to the Medical Symposium is an effort to clarify certain types of character. These types which we are to study are denied by some very good psychologists and psychiatrists who believe that judgment governs the acts of all persons except those who are afflicted with definite psychoses. Society largely believes this way.

Other psychiatrists believe that the majority of asocial and antisocial acts is the result of a definite disorder of brain function for which the doer should not be punished but segregated.

Between these two extremes lies a fertile field for work. In this field, and rather nearer to the side of normality than insanity, are to be found the types of character about to be studied.

In developing them, the ideas of Tanzi, the Italian psychiatrist, will be closely followed, because they are clear and convincing. Quotations, unless otherwise acknowledged, will be taken largely from the chapter on "Constitutional Immorality" in his book "Mental Diseases."

The Inherent Immoral.—The "constitutional immoral," or, as I have chosen to call him, the "inherent immoral," is a person who *lacks something out of his character*. That something is large enough to mark him as being below or away from the average man in character. It may show itself day by day, and cause its bearer to be labelled "queer," or it may only show under especial provocation.

Tanzi's translator hit upon the word "altruism" as a name

for that something which is lacking in these persons. It is exactly a *lack of care for others* which is the keystone of these par-anormal characters.

Varieties and Forms of Non-altruism.—There are many varieties and forms of this non-altruism. For instance, there is the hair-brained, happy-go-lucky fellow who pursues his pleasures and excitements to his own social and financial undoing. At the other extreme is the quiet, forceful, and brainy person who, needing ten dollars for a summer's holiday, goes out and beats a friend to death, robbing him of the money.

Society never puts the former into an asylum or other institution for the mentally afflicted because he is a good fellow—"foolish but a good sport."

The latter is often hanged by society because the monstrousness of his offense raises against him a furious mob resentment, which listens neither to reason nor to justice.

During the school years, the former type is a problem much more internal than external—more personal than social. The latter group, on the other hand, lies within a good part of the children who cause the real social problems of school life.

Anomaly of Character.—I have given the name "inherent immoral" to these two groups of pathological personalities. Inherent immorality is neither more nor less than an anomaly of character. Hallucinations, illusions, and delusions, are not found in it. Practically all those symptoms that are relied upon to make the diagnosis of insanity are absent. To the occasional observer these persons do not excite interest, or even a second thought, because they appear as normal or average. The flaw lies in a *suppression or congenital absence of a moral sense*.

When is the perpetrator of a crime a criminal, and when is he immoral or insane? A criminal should be punished. An insane person should be treated. An immoral should be permanently segregated or so placed as to remove him as a social danger. He should be legislated for and cared for on the basis of his irresponsibility the same as the imbecile. But he is not an imbecile.

Two Distinct Types.—There are two distinct types of the inherent immoral—the "*impulsive immoral*" and the "*calculating immoral*." In addition to these there is a *mixed type* which, of course, partakes of the characteristics of both.

Moral insanity in the adult is only the persistence of immoral tendencies of childhood. It is easier to sketch the adult immoral first, and then go back to study his youthful appearance.

Type First: the Immoral from Impulsiveness.—This type is immoral from impulsiveness, or from excess of egotistic desires of restlessness, of aggressiveness, or of individualism.

There is a physiological, or rather a physiopsychological basis for the acts of the impulsive immoral. This consists in a certain instability of character. A sort of weakness of inhibition, as for instance a tendency for gambling. Such a weakness is just as real in the realm of the intellect as susceptibility to certain articles of food such as strawberries is in the physical realm. It manifests itself in a constant thoughtlessness and carelessness toward consequences which is the despair of friends and relatives. Such a person will gayly sacrifice much future good for the sake of a vivid present indulgence. All efforts to reason with him will be found unavailing.

When such a pathological personality comes into conflict with custom or the law, there ensues a period of genuine surprise in the first instance. Surprise, because he is unable to see wherein he is wrong. As these conflicts recur, surprise is replaced by irritation and then anger. And lastly anger breeds a desire for "getting even with a society which tries to down a man who is trying to live properly."

This whole mental process is the result of the actual mental inability of the patient to understand his own handicap and to adjust himself to his sphere in life.

This sad human wreck is the result of the inability of society to understand such mental handicaps.

"In childhood immorality of the unthinking type displays itself in precocity of the sexual instincts, arrogance, overbearing conduct, lying, scheming, disobedience, running away from school and home, vagabondage, thirst for adventure, etc. These tendencies become accentuated about the twentieth year, and lead to desertion, sexual offenses, quarrelling, swindling, and foolish changes of residence, occupations, and friendships. Thus, out of immorality there is gradually developed criminality, in either generic or specific form."

The key phrase to describe these unfortunates, young and old, is: *impulsive thoughtlessness with carelessness of consequences.*

Type Second: the Immoral from Deficiency of Sympathy.—This type lacks sympathy for others, and therefore also altruism, sentimental reserve of solidarity, compassion, and regard for public opinion (Tanzi's wording).

I have called this type the "sluggish immoral." Not that he is really or necessarily sluggish in either physique or mentality. Possibly I should call him the "deliberate immoral." He lacks sympathy wholly. He has no thought for others except when his cold and selfish reason tells him that by helping others he will further his own ends. If he is polished and courteous it is for good and selfish reasons. His lack of moral sense leads him into no such headlong dashes as fill the life of the impulsive immoral. His decisions are planned with no qualms of conscience because that phase of conscience is totally undeveloped in him.

As such a personality as this grows from childhood to adult life there is first a period of surprise at the tears and kindnesses of others around him. He cannot understand motives which have any other origin than selfishness. There is a gradual change until he develops an exaltation of his own ego, because of his growing conviction that his own callousness is superior to the altruism of his associates. Having arrived at this conclusion, he is ready for anything his fancy dictates, because he cannot sense the view-point of all the rest of the world. He is morally imbecile. Nothing has atrophied his mind, because there was nothing to atrophy. He lacked the moral sense from birth.

No one word will describe the second group, but the word *calculating* comes nearest to it. He is calm, frigid, slow, reflective, without sympathy.

The treatment of the two groups differs radically. The keynote for the first group is *sympathetic understanding*. That for the second is *permanent pitying care*.

Diagnostic Elements.—At first glance it may seem that the first group will be hard to separate from the harum-scarum active youngster who is entirely normal. This is not so. There is a vast difference between the peevishness which accompanies healthful weariness after hard play in the normal child and the restlessness of the impulsive immoral. It is the difference between normality and abnormality. It is as indescribable as the differences between many things in our experience which we are able to sense clearly but cannot define in words. The impulsive-

ness is of a kind which irritates others. A driving, impulsive, normal youth is urged on and, applauded while the impulsive immoral finds himself thwarted by the immobility or active hostility of his associates.

Such personalities can be recognized in childhood. They are worthy of the best efforts. Their very impulsiveness can be turned into right channels in a good percent of the cases, and when so turned will often provide a force capable of more than average work along chosen lines.

Sustained effort will be necessary, in order to find just what irritants in daily life are keen enough to allow impulse to dominate reason.

The recognition and treatment of the second class will usually have to wait until some overt act is committed. This is because of the early development of the ability to simulate contrition, to cover up faults, and to smooth their own paths by smoothing the paths of others. There is little hope for that which is called "reformation" in these persons. It would have to be recreation rather than reformation, because it would be the replacement of a thing which has never existed. Their proper treatment, therefore, resolves itself into the instituting of such measures as will protect society from their actions, and at the same time give the unfortunates all the freedom possible.

The decisive points indicating the diagnosis of moral insanity, according to Krafft-Ebing, are:

- (1) Insanity, drunkenness, or epilepsy in the parents.
- (2) The existence of anatomical and functional signs of degeneracy, with special consideration of the conditions of the sexual life as the most important foundation of the development of the moral sense.
- (3) The existence of signs of an abnormal state of the vasomotor functions and motor functions, as in tolerance of alcohol, epileptoid symptoms, etc.

Further diagnostic light is thrown on the moral defect by the demonstration of intellectual weakness; abnormal emotional irritability; defective reproduction of ideas; impulsive, perverse feelings depending upon natural impulses and instincts; and finally the periodic character of the activity so frequently observed. This applies equally well to moral imbecility.

It must be developed from the history of the individual

whether his moral obliquity began so early as to rule out the *influence of bad example*. It is also necessary to determine whether the conditions under which he has spent his earlier life have been favorable or unfavorable, whether he has had the benefit of broadening education. If under good conditions and in spite of proper education the patient's history indicates absolute incorrigibility, then the diagnosis of moral imbecility may be tentatively made. If observation over a period of time shows that character is becoming less stable, then the diagnosis may be made permanent.

Since the diagnostic points for these inherent immorals are so intangible and elusive it is well to characterize each type in general phraseology. The congenital impulsive immoral is characterized by *impulsive thoughtlessness with carelessness of consequences*. The congenital calculating immoral is *calm, frigid, slow, reflective, without sympathy*.

Treatment.—Little more is to be said about treatment because the locating of a given patient in one or the other class carries with it the general indications for future handling. The first group can be fitted into the proper place in life if their handicaps are discovered and allowed for. The second group will always require supervision because they lack something which is entirely necessary for life in a free community. Most of them ultimately reach some public institution—penal, corrective, or charitable. Most of them get to these institutions only after long years of misunderstanding, or after the commission of acts of criminal nature for which they are not morally responsible. "If alienists would be firm and unanimous in declaring that congenital immorality is an anomaly, and not a disease, legislators and magistrates would also be more precise and unanimous in assigning to the immoral by nature a treatment that would assure society, and still be in accord with justice and prudence."

XXV. THE PROMISE OF RESEARCH IN THE ANATOMY OF FEEBLE-MINDEDNESS

By E. E. SOUTHARD, M.D., Boston, Mass

The Anatomy and Pathology of Feeble-Mindedness.—Doctor Groszmann has asked me to state in a few words the general

situation as to feeble-mindedness from the point of view of the anatomist and pathologist. My own researches are by no means complete, and in point of fact what Doctor Walter E. Fernald and I have planned will take five years in the execution. The work of but two years is now available. Nothing, however, has interested me personally so much in my varied work in psychiatry as this very problem of feeble-mindedness. It is not only from the standpoint of the social importance of the problem of taking care of the feeble-minded properly. It is not merely a question of our interest in saving society from the evils which attend the community life of certain types of feeble-minded of high grade, namely, the subnormal¹ and moron cases; and in the other direction, it is not merely a satisfaction of scientific curiosity if we attempt to study the brains of the feeble-minded with all the means now at our command. It is true that the anatomist has much to learn from the brains of the feeble-minded which will be of value to the science of brain anatomy itself; and it is true that a study of the conditions of feeble-mindedness in the community will throw light upon a great number of economic and political problems.

What has struck me of late, however, is that there is an interest attaching to feeble-mindedness which transcends the analytic interest of the anatomist or pathologist, and transcends alike the interest of the social statistician. Between the medical analysts, on the one hand, and the social statistician, on the other, it has become increasingly clear in modern time that the individual as an individual gets dropped out from consideration. Now, studies in feeble-mindedness above all insist upon the individuality of the case in hand. Not even the epileptics or the insane require so much adherence to the point of view of individualization since, after all, epileptics fall into major groups, and it is profitable to study the insane in a daily increasing number of forms and subforms of disease. The feeble-minded, however, seem all to differ from each other, and at any rate to provide a vast number of particular educational problems.

Individual Problems.—The study of feeble-mindedness is a study of individuality. I believe it will be found to be one of the most profitable forms of individual study that the world is

¹ It will be seen that Doctor Southard does not use this term in the manner employed by the author of this book.—M. P. E. G.

likely to see. I believe this will be found to be the opinion, if not of Pinel and Itard, then certainly of the great leader in this field, namely, Séguin. Whether the current of interest flows from Séguin to work like that of Doctor Walter E. Fernald or to work like that of Doctor Maria Montessori, insistence from the educational point of view is naturally and invariably focussed upon the individual.

The Personal Attitude.—The individual, the individuality, the philosophical principle of individuation has something a little too subjective about it to appeal to the man in the street. And it is to be suspected that the physicians themselves do not sufficiently take into account (at all events early in their practical lives) the phenomena of personality. The reason why one prefers an old physician to a young man is not that he is likely to know more about the analysis of the human body (indeed, he is rather likely to be farther away from analysis than his younger colleague), but that he has acquired in life the sympathetic aspect which the medical school failed to exhibit to him.

A book like Doctor William Healy's "Individual Delinquent" brings up tort upon these matters. Written primarily, doubtless, to counteract the formulation of the churches, Healy's book is also stimulating to the physician who is brought face to face with social problems of the handling of the individual which his medical knowledge and analytic insight do not cope with. Séguin himself, or even Pinel, would doubtless readily have granted the point just made. The present day, however, offers advantages which the days of Séguin did not offer.

Mental Tests.—In the first place, we have methods of testing children's mentality in a systematic manner. The Binet Tests, made as they have been the victims of overpraise, on the one hand, and sweeping contempt, on the other, have beyond question for the first time put a different face on the situation, both in hospitals for psychopaths and in schools and courts. The Binet grade which the psychologist more or less confidently assigns after an hour's study, is something that the commentator who knows more about the case than the examiner may not wholly agree with. The fortunate thing for the science of the situation is that the Binet grade is something concrete which you may at least *disagree* with. Meantime, these tests, which are being perfected from year to year, and applied, as by my col-

league, Professor R. M. Yerkes,¹ in new preferable ways (with new and more modern forms of casting up the results), are growing in value, and it is safe to say that mental tests can no longer be dispensed with in the best clinics.

Blood Tests.—But besides the educational point of view which has flowed from the work of Séguin, and the mental tests which have flowed from the lucid psychology of Binet, we have another arm at the present day. The best authorities agree that any adult with mental symptoms deserves at least a suspicion that he may be syphilitic. Accordingly, the Wassermann Test has become an indispensable aid to diagnosis in psychopathic hospitals and psychiatric clinics. Anywhere from 10 to 20 per cent of the intake of such hospitals and clinics may well prove to be syphilitic; certainly an important minority of cases. The data as to congenital syphilis and the syphilis of children and adolescents are not as yet so exactly statable. The fraction among children and adolescents is doubtless smaller than among the adults, but there is no question that an important field of research lies in the relation of syphilis to a certain number of the feeble-minded. Repeatedly in our Massachusetts experience cases have been found of congenital syphilitic in whom the ordinary clinical features were entirely absent.

Somatic and Sociological Elements.—If we can now proceed to the somatic and sociological knowledge of cases, having the advantage of a Wassermann reaction (negative or positive), the Binet-Simon mental grading (or some similar grading), and accurate, progressive records of educational accomplishment by the feeble-minded, then we can proceed far more confidently to the bodies and brains of the cases which die, with the hope of learning something of importance. I wish to insist, therefore, that we are far more able in the year 1916 to do important work in the brain anatomy of feeble-mindedness than we were in the days of Séguin; far more than even in the long years which Bourneville spent upon the topic at the Bicêtre. Indeed, it was only a little over ten years ago that books like Alfred W. Campbell's "Histological Studies on the Localization of Brain Function" began to appear, offering us the normal topography of the cerebral cortex as a background upon which to study the

¹ The Yerkes Point Scale uses Binet material, it is true, but is otherwise based on a different conception of analysis and diagnosis.—M. P. E. G.

changes and deficiencies in feeble-mindedness. It is true that the lamented Hammerberg twenty years ago did pioneer work of extraordinary excellence in this field. And it is a matter for congratulation that the field of feeble-mindedness should have stimulated such important work on *normal* cerebral topography from the histological point of view as is exhibited in the plates of Hammerberg's posthumous work printed at Upsala.

Brain Anatomy in the Feeble-Minded.—The plan which Doctor Walter E. Fernald and I have formulated with respect to brain anatomy in the feeble-minded is to execute with every brain of a long series (twenty-three have at the present writing been investigated) precisely the same technical devices. We think that conclusions of importance will hardly be reached before one hundred brains have been systematically examined. 'The autopsies, which are not always easy to secure, are systematically performed, with due attention to the organs of the soma, including the glands of internal secretion, and the brains, preserved in appropriate ways, are photographed systematically so that a permanent record is obtained of each marking on the vertex and base, the two flanks, and the two mesal surfaces. The brains are then sectioned, and again photographed in six or eight frontal views, according to the size of the brain in question. Histological preparations are made from chosen areas, preference being had for the moment to those areas about which the physiologists know most. The material is carefully preserved in such wise that further recourse may be had to it as successive problems may arise in connection with the material. For example, if in a certain region exudate is discovered, indicating an active process (perhaps unsuspected in life or at the autopsy), then further studies on adjacent material may be stringently necessary for a drawing of proper conclusions as to the congenital or acquired nature of some of the changes found.

So far we are not particularly well able to evaluate the histological changes. The original conclusions of Hammerberg as to the relative importance of the so-called contraction spaces due to artificial shrinkage in preserving fluids and the comparative unimportance of so-called distortion of cellular elements have probably been justified by modern work. Except in cases which turned out to be exudative and possibly syphilitic, we have so far come upon the richest leads in connection with certain

gross appearances, such as the relative complexity of the convolutions, the relative sizes of the corpus callosum in different cases, and the like.

Correlation of Findings.—What we have tried to do is to correlate, first, the educational capacity of the subject; second, the psychometric level as indicated by the Binet or other tests; and, third, the convolutionary complexity of the brain. It has proved not impossible to arrange our comparatively short series of brains in very suggestive order. It will probably be going too far to say that the simpler the brain, the lower the educational capacity, and the lower the psychometric level. In the first place, psychometric level and pedagogical capacity do not always agree; but if we are able to triangulate these scholastic and special test data with the brain data, we are enabled in certain instances to get a more intimate view of particular cases. It is true, also, that we have not as yet been able to examine enough of the brains of the feeble-minded of the higher grade. This is a lack which the total literature exhibits. The only worker who has put a long life largely at the disposal of the brain anatomy of the feeble-minded is Bourneville, and his collection is comparatively deficient in these high-level cases.

We are using as a background to this work the photographically recorded brains and the preserved material of over five hundred other cases of insanity, epilepsy, criminality, and the like, even including certain so-called normal brains. But of all this material, it seems clear that the brain material of feeble-mindedness is the most interesting.

Application to the Normal.—I do not need to insist upon the value to the education of the normal of any correlation, however slight, that we may be able to make from a comparison of brain appearances, educational capacity, and mental test level. One has only to think of the extraordinary interest of work like that of H. H. Donaldson done with the Laura Bridgman brain, now about twenty-five years ago. What an extraordinary comment upon the world's inefficiency it is that, although the brain is certainly an important tool in education, its study has been treated in a manner little short of stepmotherly.

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APPENDIX III

FIRST AND SECOND YEAR DATA OF P. E. G.¹

FIRST YEAR

DAYS

- 10: Prefers light to darkness.
- 12: Smiles.
- 13: Follows movements with his eyes.
- 15: Croons to himself.
- 17: Raises his head.
- 22: Supports himself on his elbows, holding head up.
- 24: Pushes deliberately against resistance (his mother's hands) with his feet. Follows voices with turn of head.
- 26: Turns all the way around, lying on his back. Takes liquid from spoon.
- 36: Plays with his father, opening and closing eyes, as if going to sleep, peeping through half-closed lids, etc.; appreciates the fun fully.
- 38: Laughs aloud; turning his head away quickly as if teasing.
- 45: Knows father, recognizing him immediately.
- 46: Holds his hair-brush tightly, waving it to and fro, as if trying to use it.
- 57: In his carriage, he always prefers to be wheeled over the roughest roads on his mountain home.
- 58: Minds his father's talk.
- 62: Connects his father's getting out of bed in the morning with his father's getting dressed and then playing with him.
- 63: Simultaneous impulse gives way to independent and alternate movements. Purposeful movements of head. Imitates mother's lullaby song to him, in almost perfect rhythm. Loves music.
- 117: First speech sound, intelligently connected with function.

¹ Cf. pp. 115 ff.

DAYS

- 121: Discovers that rattle turns on pivot between forked ends—holds handle in one hand and tries to turn rattle wheel with other. Never sticks playthings in his eye, never hurts himself that way—has from the start had perfect adjustment. Always jolly. Plays alone. Recognizes faces in mirror.
- 132: Enjoys Christmas tree, catches at ornaments and holds them. Prefers colored things.
- 143: Raises himself up to a sitting position.
- 144: Strikes keys on piano intelligently, in good imitation of his elders. A perfect imitator.
- 145: Tries to pick printed rose from wall-paper. Holds his bottle all alone. Imitates sounds; listens to speech and understands much of what is said to him. Constantly and purposely investigates and experiments. Movements well co-ordinated.
- 156: Moves his arms in good-by greeting.
- 159: Follows song in perfect rhythm. Follows simple directions.
- 160: Speaks the German words *ach*, *ja*.
- 166: Dips spoon into cup.
- 178: Pulls his arms in and out of garment in dressing and undressing.
- 179: Definite evidence that he never forgets what he once has done or observed.
- 181: To the question, "Do you love your father?" he answers: "Ja." He understands both German and English.
- 182: Drinks from cup. Rings bell. Swims around in big bathtub full of water.
- 199: Plays "hand over hand."
- 206: Rises on his feet.
- 209: Being held in arms of mother, he was told: "*Mach' die Thüre auf!*" (Open the door!) He opened the door, which was just a trifle open so that he could manage it with his hands.
- 225: Plays many "make-believe" plays, like pretending to drink out of an empty glass, eating from an empty plate, etc.
- 229: In going out with parents in big carriage, holds and moves reins as if driving.
- 231: Distinctly free wrist movements.

DAYS

- 235: Wipes his face clean with handkerchief.
- 249: Has six teeth.
- 263: Finds things hidden under cloth, or in corner. Throws things.
- 272: Follows the command, "Hands down," in gymnastic play.
- 275: Plays with his image in mirror, recognizing "baby."
- 276: Feeds himself with spoon.
- 277: Pulls chain to turn electric light on and off. Folds his hands. Stands up supporting himself.
- 301: Sitting in his high-chair, from which he has been dropping plates, cups, spoons, etc., when through with his meal, for days, he discovers, while dangling his enamel-ware platter over the edge of his "table" ready to drop it, that it would make a noise in hitting against the chair. Immediately he looks, tries it again, and again, and after this amuses himself in making the noise with other things instead of dropping them. This is an example of his observation and experimenting.
- 312: Is mostly constructive in all his play; rarely breaks or destroys a thing. Shows good association of ideas and skill in play. Fond of driving, holding and using reins and whip. Has ridden on horse, dog, calf, and is fearless.
- 317: Pulls his shirt over his head. Throws ball back to playmate with both hands. Misses his father, who has gone on a long trip, holding out his arms for him to come back. Knows his father's picture.
- 333: Stood up alone in moving carriage, holding on to dashboard. Plays with dog, enjoying a game of teasing and fooling him.
- 361: Says "ank oo" (thank you).
- 364: Pours water from bottle into cup and drinks.

SECOND YEAR

On tenth day he took his first walking step. He had been quite heavy, so that early walking had been discouraged. At fourteen and a half months he began really to walk. A month later he marched to the sound of a drum, "right, left." Built with large hollow cubes (nest), also balancing himself, stepping from one to the other.

His vocabulary at one year, four months: Mamma, my mamma, papa, dada, gaga (all three meaning his father); Hei (name of his brother Heinz), Oward (Howard), Doctor, moo-cow (meaning also horses), kittie, chickie, quackquack (duck), doggie, wawa (water), baba, bébé (baby), byebye, nein (German for no), ja (yes), ach, ticktick (watch), hot, left-right (indistinct), c(r)ackers, a(ll) right, (th)ank (y)ou, Robert, ah-ah (for water and other things), ta-ta (also meaning thank you, water, etc.).

Enjoys his second Christmas wonderfully. Loves his tree.

At seventeen and a half months he plays in sand-heap with shovel and bucket. Walks up the greater part of hill (four hundred feet ascent). Is most interested in living things, especially moo-cows, by which he means mostly horses, cows, and other four-footed animals, except dogs and cats. He understands practically everything, does little errands, bringing things, etc.

At nineteen and a half months he picks his first leaf. From now on much interested in flowers, and other growing things, picking them, bringing them home, insisting on having them put in water, etc.

He will always choose rocky and steep paths, looking for difficulties to be overcome rather than shirking them.

When twenty months old he discovers that a family at foot of hill has a pony. He makes daily pilgrimages down the hill to see and admire the animal until it is bought for him. He loves his pony and has the absolute sense of proprietorship. On his first ride in pony-cart, pony first runs away. He is not frightened, but ready to get back into the cart as soon as animal is under control.

When a little over twenty-one months old he has his first automobile ride. From now on he is passionately fond of machines.

At twenty-two months he is a wild, happy boy, full of play and tricks and sunshine. Always active, always in the open, loves the cold better than warm weather or warm clothing.

At two years his vocabulary is about as follows:

Mamma; papa; Pat; C(l)ara; shep (chef); Teddy (his pony); Paul (his own name); Max; Deewee (name given him by big brother); Mishi (Mr. Murphy); Brownie (name of his dog); God; George; Doctor; Princess (name of another dog); John; Howard; New Lork (New York—for another year, he substituted "l" for

consonantal "y"); dada; mother; gaga; boy; man; girl; bébé; sport; tent; towel; rabbit; basket; horse; party; flag; ball; car; train; house; home; peach; feet; hands; pin; headache; wagon; cracker; bread; toast; stars; birthday; cake; hammick (hammock); piece; tea; duck; fish; piano; music; toothpick; cotton; soup; butterbread; heart; quackquack; milk; ice-c(ream); egg; penny; money; shoes; stockings; powder; hair; bucket; morning; lady; stick; chocolate; cigar; Hosen (trousers); potato belly; Kartoffelbauch; camp; bed; boat; Mädchen (girl); moon; stairs; water; eyes; nose; mouth; berries; schwarze Beeren (blackberries); choochoo car; spoon; cup; bottle; night; bird; chickie; moo-cow; bad; good; happy; hungry; hot; cold; wet; dear; heavy; clean; dirty; still; fine; pretty; grand; more; mehr (more); enough; nass (wet); wet; open; big; little; two; bad man; bad boy; bad girl; Beebee hungry; hello; hurry; stay here; mamma's tent; my towel; way down; cease; hurrah; nein (no); no; ja (yes); yes; down there; bang; Papa's Junge (papa's boy); hoah; feet down; mamma sleep in there; I love lou; dear mamma, headache; other wagon heavy; look; tanzen (dance); dance; clean hand; dirty hand; Baby did it down there; ouch; more cotton; now; bad dog, go home; come Brownie; go on, papa; keep still; stop it; I will go now; no more; another piece; sleep fine; dear heart; eat; drink; now I go; byebye; good morning; poor lady sick; fly; hit; stop it; write it down; moon is gone; look at that; big bed; down-stairs; up-stairs; lie down; two eyes; get up; like; all gone; doggone; over there; move over; I don't like —; how do? (how do you do?).

A little later, there were these enrichments of his expressions: Climbed tree (after doing so); monkey in the tree (meaning himself); Papa, help me; Baby, that's me; one papa; Papa, get up; ganz nass over there (all wet over there); two pins; two mans; papa's paper; water going down; baby's romper; Open (door) for papa; Baby (will) pick them up; pretty moo-cow; Baby's book.

APPENDIX IV

SPECIMENS OF REPORTS ON CHILDREN EXAMINED¹

For a specimen report on an *exceptionally bright child*, cf. Appendix III.

The following report on a boy of 14 was given to the principal of his school where he had been in the same primary grade for *five* years.

Case 94.—This boy has a most decided handicap in his greatly impaired vision, which the glasses he wears do not really correct. In addition, he is deaf in his left ear and the hearing in his right ear is diminished. These two defects alone help to explain his failure in the ordinary school, where no attention can be paid to them. Whether the shortness of his visual and auditory memory and his practical illiteracy are due only to these two defects, or also to the fracture at the base of skull and the consequent inflammation of brain which he suffered when a child of two or three years, is doubtful. Of course there is a chance of a brain lesion having occurred at that time.

He is certainly very backward in everything that refers to the use of words. His spelling is wretched owing to his lack of phonetic concept. His visual imagination is poor. A picture-story means little to him. While he can count, he cannot construct numbers on the abacus. In contrast to this is his quickness in identifying and adding figures with dice.

On the other hand, to everything that implies action he responds well and shows good retention. He can carry out nine directions given simultaneously without a single break. Out of school his life is full of dramatic interest and active work. He has made his father's barn into a club-house where he inspires his companions to play cowboys and Indians, where they have a moving-picture machine, etc. He helps his mother and does all kinds of work around the house. To have been kept in the same primary grade (third) for five years without proper attention to his special defects must have killed all his interest in school work.

¹ Cf. p. 367.

He had no incentive. His interests therefore centred on the out-of-school occupations where his energies had some outlet. Neither his teachers nor his parents seem to have known the real boy well enough to appreciate his needs.

It is plain that this boy needed first of all proper medical attention. The next step should be to take him out of his class and place him in an educational environment where his faculties may be sounded, and where he may develop his abilities in a normal and organized manner. A special class of the right kind may answer the purpose; but a removal into an entirely different régime, such as a laboratory school on the order of "Herbart Hall" can provide, would be far better, also because it would counteract the vitiating effect of the stigma which is now attached to him in his present environment, and because his parents have apparently not the slightest idea of what their boy really is. He has much in him to make eventually a useful and prosperous citizen.

The following are a few examples taken from a series of rapid examinations made on pupils of a New Jersey township which is exceptionally well situated. These children are all from the poorer classes of that township.

Case 95.—*F. G., boy, 7¾ years old.* Boy has no home, is boarding, and has no regular home influences at all. Report is that he is nervous; perspires freely; suffers from biliousness and headaches; has had inflammation of bowels and much bronchial trouble. Disobedient, but very unhappy when punished. Pupil of first grade with an excellent record in art, manual work, writing and story-telling, but backward in reading and number.

Clinical Findings.—Diminished vision in right eye; apt to confuse color names, either because he is color-blind, or because he has no confidence in his own judgment. Visual and aural memory very defective. The same lack of memory-power is shown in his attempts to follow a series of simultaneous directions.

Immature in understanding of language elements, but in contradiction to the school report is found to read rather well and understandingly from the primer, with excellent expression. Can also tell stories from pictures very nicely. In number-work he is slightly behind his age, but exhibits fair ability to learn. He surprised most particularly in his rational and prompt solution of the form-board problem, and by his handling of the picture-arrangement test, which he would have undoubtedly

solved completely had it not been for his lack of confidence in his own judgment (*cf.* naming of colors). He showed fair idea of construction, and drew crudely but naturalistically, in perspective, and with much detail and action. He carries an air well.

The boy is slightly retarded, of a constructive and artistic type, and perfectly able to get along in school if he is given training commensurate to his needs. He needs loving care and home life, eventually in a good institution. His bodily condition requires medical attention.

Case 96.—*A. W., girl, 10 years old.* One of twelve children, burdened with bad heredity and handicapped by filthy home conditions. Has had rheumatism in knee, and is suffering from constant headaches. Still in second grade, with very poor progress, although she is good and obedient. Does well in manual work.

Clinical Findings.—Tactile sense practically undeveloped. Has adenoids and enlarged tonsils. Her teeth are neglected. She has a distinct speech defect.

Her visual and auditory senses are normal, but her memory is very weak. While she has some power of primitive association, her general intelligence is very low. She has a good idea of form, but no idea of construction. Purely mechanical in execution of manual tasks. Her drawing is crude, primitive, and helpless. The only spark of real intelligence was shown in her correct arrangement of the picture test, which would evidence a certain amount of cunning, at least.

Owing to her defective intelligence and adverse home conditions, it would seem best to place her under custodial care, especially as there is moral danger ahead of her. Medical attention may bring some relief.

Following are a few cases of brothers and sisters which illustrate the influences of heredity and home environment even more strikingly:

Cases 97 and 98.—*D. B., girl, 13 years old, and W. B., her brother, 11½ years old.* Poor and neglected home conditions, with many adverse influences.

D. is the oldest of six children. In spite of the dirtiness of her home, she keeps herself clean, in contrast to her filthy-looking brothers, of whom only one was examined. She is emotional, does not seem strong, and the condition of her blood is not good. She suffers from sick-headaches, ill-healing wounds, menstrual troubles, and enlarged tonsils. She is still in the third grade, and her school progress is reported as unsatisfactory.

Clinical Findings.—Her visual and auditory memory very limited; she cannot retain units in her mind sufficiently securely to organize them. Willing enough, but hesitating and distrusting herself in all she does.

Command of oral language good; shows some reasoning power. In fact, her quickness in sizing up a situation and in doing some other judgment tests was surprising as compared with some of her failures. She is well capable of following a long list of simultaneous directions, and when given time and some suggestions to start her, is able to solve some of her practical problems satisfactorily.

If she could be given the opportunity of healthful environment and training, she would have a fair chance of redeeming herself. Institutional care (not custodial) would be best for her under the circumstances. Since she is the oldest child, she is kept home from school the greater part of the time, and when she does attend, she is kept busy out of school hours, helping with the household and the other children, thus being deprived of time for rest and healthful play, and of the opportunity of concentrating on her educational needs. She also requires medical attention.

W., her brother, is in the same grade (!), and the work he does is generally poor, except in number, writing, and manual work.

Clinical Findings.—Health fair, nutrition poor. Enlarged tonsils. In height and weight he is more like a boy of 13. Left-handed. Suspicion of astigmatism which, if present, may account for his difficulty in spelling and reading. Visual and auditory memory unreliable in matter of order, memory span short. Of the primary word-picture, he recalled all of the thirty-one images; of the elementary one, only sixteen out of twenty-eight. This is, however, a fair showing as compared with his memory for detached units. His train of ideas is logical, and he gives sufficient evidence of rational thought in many ways. He understands a situation, and has good ideas of form and construction. Prompt and eager in response. Difficulties discourage him easily, but he is ready to try when encouraged. Of an active and inventive type, having some ability in drawing, with an interesting method of his own.

Needs encouragement and special attention, possibly first in a special class, better in a special school (home school). He has sufficient intellectual and constructive stamina to become an intelligent and useful member of society if the effect of his home conditions can be overcome.

Cases 99 and 100.—R. B., girl, 13 years old, and T. B., boy, her brother, 10½ years old.

R. B. is the oldest of six children, of whom five are living. Home conditions very poor and filthy, and she is neglected in body and dress. No diseases reported. Second-grade pupil.

Clinical Findings.—Looks frail and poorly nourished, with dark circles under her eyes. Undersized. Teeth very poor.

While her vision and hearing seem normal, there is doubt as to her ability to hear articulate sound accurately. Visual and auditory memory weak; can retain more units by sight than by hearing. Power of asso-

ciation fair. Reading and spelling bad; has no conception of phonics. Oral expression disconnected and vague.

On the other hand, she shows that she understands well what she reads, and gave most surprising evidence of good reasoning ability, of the power of quick judgment, and of almost immediate perspective of a situation (in the picture-arrangement test). Prompt and eager in her response, and apparently perfectly capable of learning. Has a good mathematical mind, and seems to be naturally active and progressive.

She needs first of all removal from her unhygienic home and an opportunity to live a healthy life. A parental school will do great things for her, but she will also do well in a special class if she can be taken care of away from her home.

T. B., her younger brother, is the product of the same unfortunate home conditions, of course. Has been subject to many diseases, including stomach troubles, rheumatism, and convulsions. His left eyelid droops, and vision is weaker in left than in right eye. Diminished hearing in right ear. Suffers from chills and fever, and acts as if he were out of his mind when thus affected. Conduct is good. In second grade, like his sister, and school progress slow.

Clinical Findings.—His physical condition alone would be a sufficient cause of his mental torpidity. His memory is weak, and he is very immature and helpless in oral expression. His enunciation is faulty, either from imitation of poor language, or from lack of accurate conception. Number concept underdeveloped.

On the other hand, like his sister, he showed some good judgment and the ability to approach problems of situations with a rational process, so that he cannot be considered mentally defective in the full sense of that term. He exhibited interesting constructive ability and originality in building. His drawing is primitive.

He is certainly very backward for his age, and needs special training badly, preferably in a parental school or similar institution. It would seem, however, that attention to his bodily needs, removal from his bad home environment, and special training will develop his latent faculties as in the case of his sister.

Cases 101 and 102.—*J. U.*, boy, about 13 years old, and *R. U.*, his brother, nearly 11 years old. Both are the products of a very unfortunate heredity and home environment, with immorality, filth, and neglect.

J. U. is in the fourth grade, and does excellent work in number, being "fair" to "poor" in everything else, except manual work, which he does well.

Clinical Findings.—Undersized and underweight; nutrition poor. Vision so defective that he cannot see clearly. Left ear slightly affected, and he has a general difficulty in catching articulate speech. Does not

locate sound well with his left ear. Teeth very defective. His speech is much affected by these conditions. Tactile sense underdeveloped. Visual memory slightly better than auditory memory, sufficiently so to make him more dependent upon his vision than upon his hearing. But, as vision is defective, his "eye-mindedness" is rather a drawback.

Language expression poor. But he understands directions and the content of stories. He showed surprising ability in the completion test and in the logical categories. His mathematical conception is good, but he does not readily grasp a situation. Good idea of form, but very inaccurate in construction. In drawing, he is crude but has the idea of perspective and action.

If this boy, with his gifts and defects, cannot be removed from his home environment and placed under institutional care of the right kind, he will probably grow up to be a menace to society. His physical defects need medical attention.

R. U. is still in the second grade and his school progress is poor all around.

Clinical Findings.—He is undernourished and neglected. Teeth need attention badly and he has a speech defect similar, it is reported, to his mother's. Visual and auditory memory weak. Vision in right eye suffers from rapid fatigue; this eye seems also to have a restricted field of vision. Hearing in left ear diminished.

Almost illiterate and his idea of number is limited, although it would seem that here he is teachable. Good idea of form, but little conception of construction. His graphic expression is interesting as he is plainly in the "picture-writing" stage. Language undeveloped and judgment distinctly primitive.

The condition of this boy is most regrettable, and no school instruction will be of much help to him unless he is removed from his home environment and his physical handicaps are attended to. He seems teachable to some extent, but little definite can be stated under present circumstances. Must have institutional care.

A few characteristic cases from other places may be added. Only such are selected as show possibilities in spite of apparent school failure.

Case 103.—*J. E. G., boy, 7 years old.* Reported as being in Grade 1B, making no progress in school at all, owing to sleepiness and total incapability. He never had any schooling before fall the previous year, having been in his class just that one term. His home conditions seem to be fair. No diseases are reported except that the teacher finds he is continually leaving the room, so that she suspects bladder trouble. His teeth need attention.

Clinical Findings.—Sense reactions normal, but memory span is short. His train of ideas is meagre and wandering, although his vocabulary is fairly good. He cannot read, write, or draw. He has, however, a good idea of form and quite some original conception of construction. His conception of number does not go beyond three or four (just as his memory span is confined to three or four units). On the other hand, he has, owing to his good idea of form, a fine conception of comparative lengths. The most surprising feature of the mental life of this child is that in the tests of performance and judgment he shows an intelligence beyond his years. He has a fine sense of language and of sentence construction.

There is no question that this interesting boy is full of capabilities which must be brought out by encouragement and special training. His response is slow and halting, but when once started he surprises the examiner by the good work he can do. His greatest obstacle is his timidity and diffidence. He seems afraid of doing anything. He will not move from one place to another upon a simple direction, but has to be led by hand or be encouraged by another person going with him. This gives the impression of a psychopathic condition which suggests an early examination by a specialist. There seem to be in his mind some dominant ideas which check the natural flow of his impulses. When once he is liberated from these checks he will undoubtedly develop considerable mental power.

Case 104.—*B. C., boy, 11 years old.* Reported for being deficient in all school subjects except geography. Presents a nervous lack of attention and a tendency to talk nonsense incessantly. From his history it would seem that there is some defect on the mother's side; she cannot talk correctly, but the report gives no reason for this condition. He is suffering from a chronic inflammation around the left eye, and suffers from chronic catarrh.

Clinical Findings.—Vision unimpaired. The tendency to talk nonsense was not observed during the examination. Very backward in written language and also in reading. Yet he has certainly a very good command of oral language and shows logical thought in many ways. In rational application he is distinctly normal. He has a good memory for mental images and for simultaneous directions. This would indicate that he would develop good attention and concentration if his interest can be aroused. His train of ideas is natural and normal. Has a good idea of number and a fair conception of construction.

His school work has not touched him, apparently; but he has certainly possibilities which can be developed by proper educational methods even without "special" class work.

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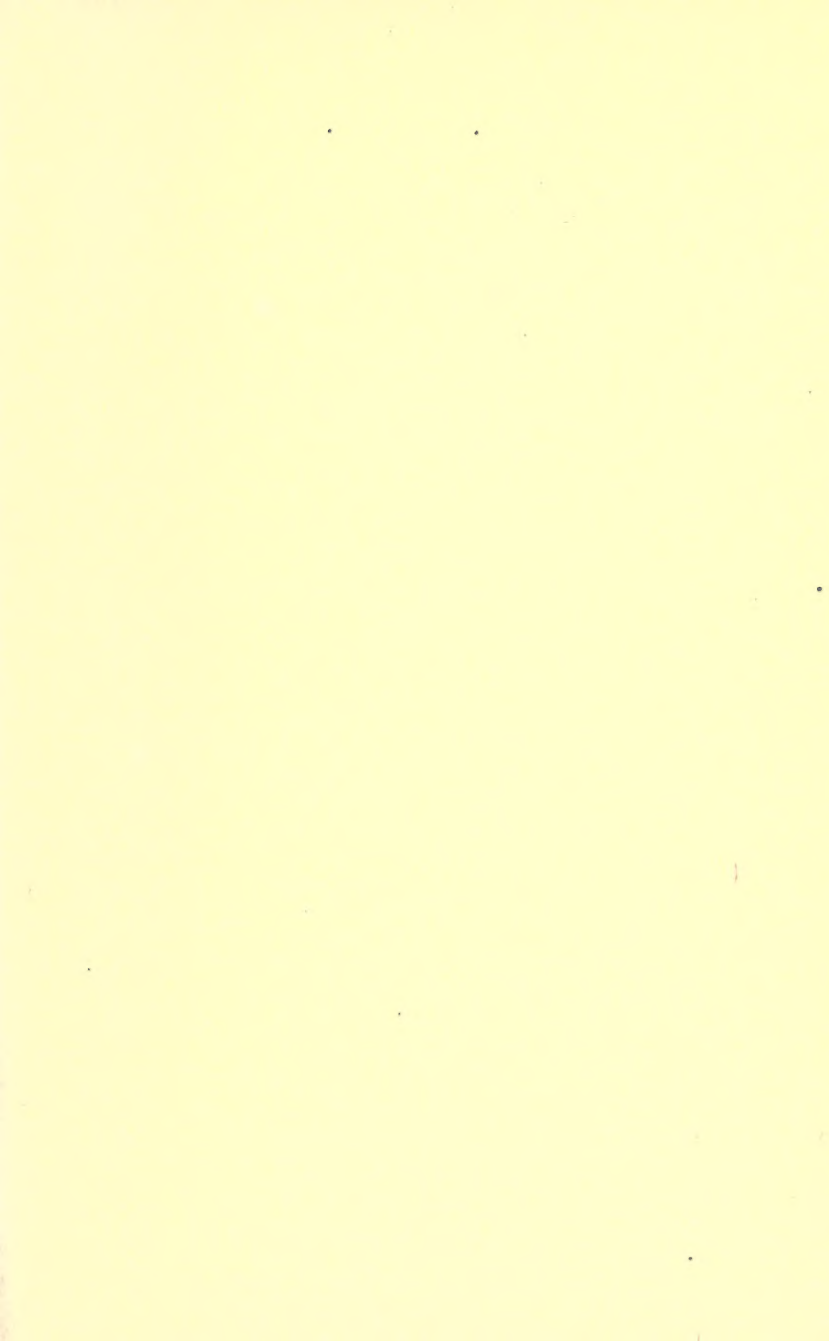
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